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Tactical Principles and Decisions: The defensive, delaying ...

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TACTICAL PRINCIPLES AND DECISIONS

PREPARED BY

THE SCHOOL OF THE LINE

THE GENERAL SERVICE SCHOOLS
FORT LEAVENWORTH, KANSAS

1920

VOL. II

UNIV OF CALIFORNIA

THE GENERAL SERVICE SCHOOLS PRESS
FORT LEAVENWORTH, KANSAS

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CHAPTER VI

The Defensive

(A) A GENERAL DISCUSSION OF THE DEFENSIVE

LIEUTENANT COLONEL LAURENCE HALSTEAD,
Infantry

1. Strategical and Tactical Forms of the Defensive.
2. Discussion of Defensive Situations.
3. Important Considerations in Defense.
   Mobility, Flexibility, Depth, Reserves, Local and Main Counter-attacks, Overhead Fire, Advance Posts and Advanced Positions, Observation, Communications, Machine Gun Fire, Artillery Barrage, Reconnaissance.
4. Developments, Approach March, Deployments, and Frontages.
5. Positions, Single and Successive. Zones, Sectors.
6. A Division Alone in Defense.
   1. Deployed for defense.
   2. Hasty position.
   3. Organized position.
7. A Division as Part of a Corps in Defense.
   1. Deployed for defense.
   2. Hasty position.
   3. Defensive zone.
8. Conduct of the Defense.
   1. Division alone.
      (a) Position hastily taken up—Field orders, etc.
      (b) In stabilized warfare. Field orders and plans to be made to meet any contingency.
   2. Division as Part of a Corps.
      (a) Position hastily taken up. Field orders, etc.
      (b) In a stabilized situation. Field orders and plans to meet any contingency.

1. Strategical and Tactical Forms of the Defensive

For many years tactical instruction has been greatly preponderant along lines relating to the offensive rather than to the defensive. This is natural in every way, for it is by means of the attack that victory is finally won. The defensive rarely, if ever, leads to a decisive result. It is the attack which keeps the defense guessing.

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There are many examples in history of defensive campaigns, some of them successful in the end, but as the result of a change of policy rather than the result of any inherent virtue in the defense. Washington's campaigns in the War of American Independence were almost entirely defensive. In the handling of his small army, which was continually being discharged and recruited, he had but little opportunity for playing any other role until the arrival of 10,000 French troops under the Marquis de Rochambeau permitted him to assume the offensive, besiege the British at Yorktown, and finally win a victory.

While the campaigns of the Army of the Potomac can hardly be called, in their entirety, defensive in character, yet it can be said that they really never did partake much of a real offensive until Grant came to the head of affairs and forced the army actually to fight, a thing its former commanders had really never required it to do.

The defensive campaigns waged by General Lee with the Army of Northern Virginia are masterpieces of the art of carrying on the defensive. The principle that the offensive is the means by which victory is to be attained was not lost sight of by this commander, but the defensive was forced on him by the situation. He made two attempts in his career at what he judged to be the proper time to break from the defensive and to assume the offensive. The man power and the resources of the Confederacy were not equal to the occasions. One ended at Antietam, and the other at Gettysburg.

Yet the defensive has occasions wherein it may be used and used to advantage; witness the long period of defensive action on the part of the Allies in the World War wherein they patiently waited for the wearing down of the German forces, until finally the scales were turned by the addition of the American army, and the final overthrow of the most powerful military machine ever constructed became an accomplished fact.

With the higher forms of defensive this discussion has but little to do. In passing, reference may be made that there are different forms of defensive which may be forced on a small country by the arrangement of its boundary or by the strength of its military forces. For example, in case

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of a war in which the Philippine Islands are attacked by an overseas country our troops in those islands would hope to do nothing but assume a defensive attitude by the very existence of things beyond their control. It may be that at certain points there would be counter-attacks and reactionary work of one kind or another, but in the main the campaign would be one of defense, which would be hopeless to wage without the understanding that, ultimately, help would come from without.

The *strategic defensive* is divided into four forms:

(1) The *position defensive,* in which the enemy is met by a portion of our forces and held until the remainder is concentrated and ready for operation. This is the form of defensive a country more or less unprepared for war is bound to adopt, with such forces as it may gather together, to hold off the armies of the enemy while its own troops are forming. It was the form of defensive forced on Russia in the Russo-Japanese War by the geographical location of the theatre of war. Russia attempted to take up the position defensive to hold off the ever-increasing armies of Japan while she was transporting troops across Siberia, but the line of communications was too long and the Japanese refused to be held off.

Prior to the World War, had we been attacked and invaded by a European military power, the position defensive is the form of warfare we would have been bound to adopt until such time as we should have been able to organize a military force sufficient in size to drive it out.

The principles of the position defensive can readily be shown by Diagram 1. We assume that at the inception of the war a state with a small military establishment is engaged in a struggle with another state better prepared, the former may have to send its formed troops forward into the hostile territory to oppose and contain a superior force while troops in the rear are being organized and concentrated prior to taking the defensive. This situation involves a defensive policy on the part of the forces sent forth into the hostile territory—defensive after the enemy has been met. In Diagram 1 a corps is assumed to be in the process of organization at *A* and will not be ready to move

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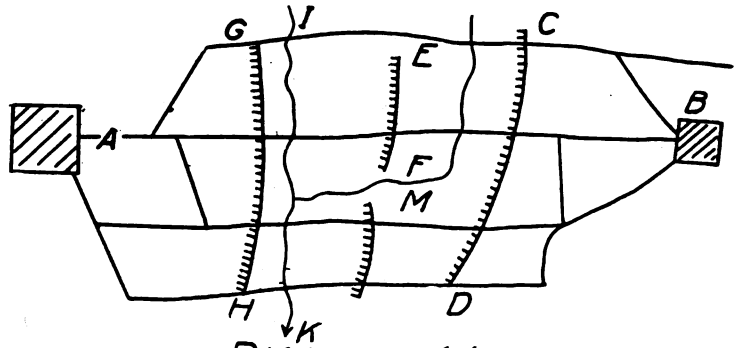

DIAGRAM I (Chapter VI A)

to the front for, say two weeks. The hostile forces at *B* can move in a few days. The river *IK* is the boundary line between the contending states. A division is sent from *A* via the road *AB* to oppose the enemy while concentration and organization proceed unmolested. This division must select some position which cannot be passed by, or cannot be contained and passed by the enemy.

A defensive line at *GH* allows the enemy to cross two rivers and come perilously close to *A*. It stakes all on one throw, for, if the battle is lost, the mission of the division ends with it also. There will be no chance to effect another stand. A position at *EF* might be ignored and passed by. One at *M* has the same disadvantage whereas, to place the division in position at *EF* and *M* causes it to fight while astride a steam, where one wing may be defeated at a time, and with a river in the rear. A position at *CD* will cause delay and if the division is defeated, another position either at *EF* or *M* may be taken up or possibly best of all a retirement made to the line *GH*. In this case a defense with a river to the rear is taken by force of circumstances.

(2) The *retreating defensive*. In this form the side which has taken up the defensive retires into the interior of its country, so that it may increase in power while wearing down the forces of the enemy. In the case of the enemy, the line of communications is stretched to the utmost and he, therefore, finds difficulty in supplying himself with

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men and material. This is a form of the strategic defensive that has frequently been used. Napoleon's campaign in Russia terminated as a result of a retreating defensive, initiated by his enemy. Johnston's campaign in Georgia was at the start a retreating defensive. A retreating defensive alone accomplishes little. It must be coupled with the determination to retreat so far as will permit the reinforcing and supply of our own army, the wearing down of the enemy, and should comprise a plan to destroy the enemy when he has become worn down sufficiently. This form of defensive can be used only when one has sufficient country to his rear to operate in.

(3) The *step by step defensive* is one in which a position is taken up and the enemy allowed to attack the same whereupon the defender retires in time to repeat the performance at some other place. This form of the defensive was used by Johnston in the second phase of his campaign in Georgia. This form of the defensive sometimes involves continuous fighting, as was the case in the Georgia campaign. The defender takes up one defensive position and holds it so long as he may, without becoming so involved as to preclude his regular withdrawal to another position farther to the rear. This form of the defensive also necessitates an expanse of country to the rear to operate in, but not so much as in the retreating defensive.

(4) The *sortie defensive* consists in waiting quietly during the enemy's preliminary operations to discover his mistakes and weak points and then falling upon him with concentrated forces. This is the best form of the strategic defensive, and the principle on which it is based—that of a counter-attack—should underlie practically all defensive operations.

The principal disadvantages of the strategical defensive are that it does not lead to decisive results except through intervention or wearing out of the opponent. It is an admission of weakness or non-preparedness at the start, and this has a moral effect which is hard to lose. It must be remembered that while it tends to exhaust the enemy it tends to exhaust our own forces also.

While this discussion of the defensive is calculated to be one of tactics alone, the foregoing is given as an introduc-

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tion to the subject and also on account of the fact that the four forms of strategical defensive outlined above may be met in the domain of tactics.

In the *tactical defensive* we will find the subject divided into a few general classes as was the case with the strategical defensive.

(1) The *passive defense.* This is the form of defense that would be taken up by a force when its mission could be fully accomplished by holding a certain position for a specified amount of time either with or without combat. The object is to avoid giving the enemy a decision either by avoiding combat, provided this can be done without the loss of our particular position, or, in case of his attack, by preventing the enemy from attaining our defensive position. In this form of defense the front line is made strong from the beginning. If the flanks are not secure reserves are echeloned in their rear, and while local reserves are held back for local counter-attacks to thrust the enemy out when he has made a penetration, heavy reserves for a decisive counter-attack are not necessary.

We may visualize such a defense as the one that would be taken up by a body of troops sent forward to act as a bridgehead—to cover the crossing of another force in its rear. So far as the covering troops are concerned they maintain a passive defensive. When they have arrived at the position, from which it is intended they shall cover the crossing, there is no incentive for them to fight. As long as the enemy will let them alone they are content and seek no trouble. They will resist when attacked and will take every measure possible to make their position as strong as practicable.

(2) The *defense seeking a favorable decision* is that form of action adopted by a force when the circumstances surrounding it are such as to indicate a temporary defensive. This form is analogous to the sortie defensive. If we assume two forces meeting on the march we have the rencontre engagement. The advantage goes to him who first attacks. Let us assume that the enemy attacks earlier than we do and his attack is so impetuous as to overwhelm our advanced elements; also that we are much superior in strength. We are temporarily thrown on the defensive

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but at the same time we seek a decision. We are watching the enemy's actions and at the proper moment proceed to rout him by a counter-attack. Again it may be assumed that two friendly forces are separated one from the other. Each force is smaller than that of the enemy, but the two combined are larger. If the enemy attacks one of these forces, it will properly take up a defensive position so as to gain time while the other may march to assist it. This again is the defense seeking a decision; the decision will be attained after the counter-attack which should be made by the fresh forces arriving and entering the engagement.

(3) The *position in readiness* is another form of defensive tactics which is adopted when the situation, especially in regard to the enemy, is so colored with doubt and uncertainty that to take up a defensive position might cause troops extra work and would cover nothing at all, or never would be used. The position in readiness is where the troops are assembled ready to move, to deploy or to retire in accord with the situation as it develops. Intensive reconnaissance is one of the necessary features of this form of defensive action.

(4) *Delaying action* is a defensive form of action when time must be gained for some purpose or other. We can visualize a delaying action as the form of defensive measure a command would use when it had the mission of covering a certain river crossing until other troops had crossed; of holding a certain defile until other troops in rear are in position; of opposing and delaying an enemy until certain bridges are prepared for destruction. All the above are forms of delaying action of opposing and delaying an enemy while other troops are effecting a withdrawal or retirement.

(5) *Withdrawal from action* is another defensive measure belonging to the domain of tactics. It is closely allied to the step by step defensive of strategy. In fact the withdrawal is the most difficult part of this particular form of the strategical defensive, and while on this subject it may be said that the step by step defensive of strategy has its counterpart also in tactics in the methods used in a withdrawal from action, which subject will be dealt with later.

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(6) *A containing action* is one which, while defensive in its nature, may or may not be actively offensive in itself. A "containing force" must be less than the force "contained." It is a form that may be used when we are on the defensive, yet as stated before the measure may require that the containing force itself attack. On the other hand, we may make use of a containing force when our attitude is decidely offensive though the containing force itself may act on the defensive.

Discussion of Defensive Situations

It is stated in our *Infantry Drill Regulations* that the tactics of defensive action are "essentially the tactics of holding extensive fronts with relatively weak forces." The idea in this is brought out to some extent in the following paragraph, wherein it is set forth that "defensive forces must discover quickly a hostile attack, must form promptly for action and open fire without delay, on the most important objectives." A long line thinly held is the most expeditious means of discovering a hostile attack. Assume that we have taken up a defensive position along the long line *AB*, Diagram 2. The enemy is going to attack, but we to not know where. Our front line is weakly held, the bulk of the troops being in the support and reserves on the lines *CD*, *EF*, and at *G*. The enemy attacks all along the line and makes slight penetration at various points, but at *H* to *I* the line is bent back as shown in the diagram. This, then, is the serious attack and can be met by closing in on the attack from the flanks by the brigade reserves, and from the front by the division reserves.

Reasons, almost without number, could be given for taking the defensive; a few may be cited here, wherein the troops considered take up the defensive, and the reasons therefor are discussed.

A Blue force of several corps is assumed to be marching in the direction shown in Diagram 3, and is approaching an unfordable stream. All information is to the effect that the enemy's main forces are beyond or south of the stream, excepting only a column, strength unknown, which is reported to be advancing up the left bank presumably for the purpose of attacking the Blue left and annoying

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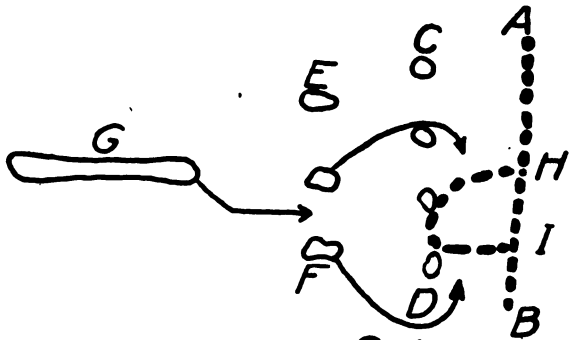

DIAGRAM 2 (Chapter VIA)

it during the passage from the south bank. A division, as left flank guard, marches at *A*. When the Blue forces are astride the stream, in the situation shown in the diagram, word is received by the division commander that two columns, estimated at one division each, are advancing via the routes shown and are but about five hours distant. The

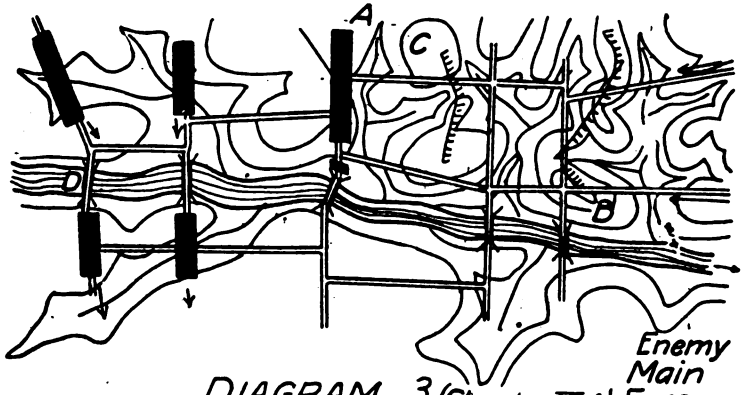

DIAGRAM 3 (Chapter VIA)

course of the commander of the division at *A* is obviously to take up a defensive position. The ground shows two defensive positions; one at *C* and one at *B*. *C* is well within artillery range of *D*, but *B* is so distant that artillery fire from beyond it would be very ineffective against our troops while crossing the river. Even though the time element may lead to less entrenching, the division must march on *B* and get into

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position there, and this is so, even though some fighting has to be done for the position. In this we have a defensive with a possibility of a minor offensive. By pushing on to *B* another possible position is placed behind the Blue division, which may be occupied should it have to leave *B*, and which will ultimately be necessary for use by the detachment which must occupy same to cover the crossing of the division when it retires.

A case can be assumed similar in most respects to that discussed under *Advance Guard Action*, Chapter IV, Volume I, where a force is marching from *A* to *B*, Diagram 4, and on arriving near *C* it is found that *B* is occupied by the enemy in force. The advance guard moves forward to *E*

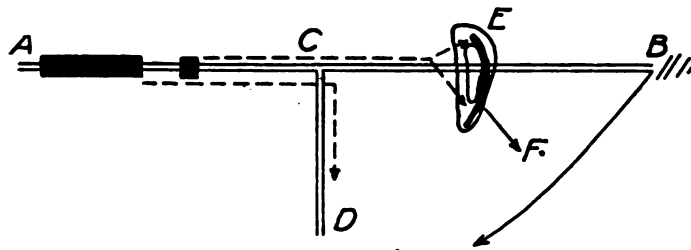

DIAGRAM 4 (Chapter VI A)

and there takes up a defensive position. So long as the enemy remains at *B* or even should he attack the advance guard at *E*, in such a manner as to cause it to surmise that the attack was not a serious matter, the defense would be passive. But as soon as the attack against *E* becomes intense or actually threatens the success of the change of direction of march going on at *C*, an active defense is assumed, and in fact, if necessary, it will culminate in a counter-attack before the advance guard commander can permit his command to be driven back on the main body at *C*.

The defense in this case would change to an offensive should the enemy be discovered to be on the march from *B* towards *D*. In this case an attack against the hostile right flank is the proper thing to do.

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The defensive position taken up in this case demands four things:

(a) Knowledge of what the enemy is about, where he is going to attack, and where his main attack is to be delivered.

(b) The advance guard should be able to resume the march formation speedily and proceed to *D* when the rear of the main body has passed, should it pass without incident or should the advance guard have to be withdrawn from action.

(c) The advance guard should be able to stand off the enemy at the position *E* for a considerable space of time, and should be ready to launch a counter-attack should the occasion demand.

(d) The advance guard should be able to march forward in the direction of the arrow *F* in an approach formation and attack the hostile flank, should the enemy endeavor to attack *D*.

Every one of these requirements, except the first, exacts the holding out of strong formed reserves. The first really requires nothing more than a weakly held front line with plenty of patrols out for purposes of observation.

Heavy formed supports and reserves will facilitate any movement the advance guard may find necessary to make, and thus again is emphasized the necessity in a defensive position of having a great portion of one's command formed and in reserve ready to use at a decisive point.

An eastern column (see Diagram 5) is advancing toward the west with a view of crossing the river at *C* and *B*. It is covered by a left flank guard which consists of an infantry division. When the main body of the left flank guard arrives at the village of *A*, the commanding officer is in possession of the following information: Hostile cavalry is holding the farm at *X* and the woods at Y; a hostile battalion is marching from the village *D* on *X*; the road from *E* to *D* is filled with hostile troops of all arms; the main body of the eastern force is not expected to reach *C* and *B* for several hours. What will be the proper course of action for the commander of the left flank guard? Two courses are open to him. He may act on the offensive or the defensive. For the offensive two directions are possible: either to advance toward Y with a view of co-operating with the main body as it approaches the bridge, or to advance toward *G* with the object of arresting the advance of the enemy's main body and turning his attention from the bridges.

In the first case the left flank guard exposes itself to an attack against its left flank; in the second, it lays

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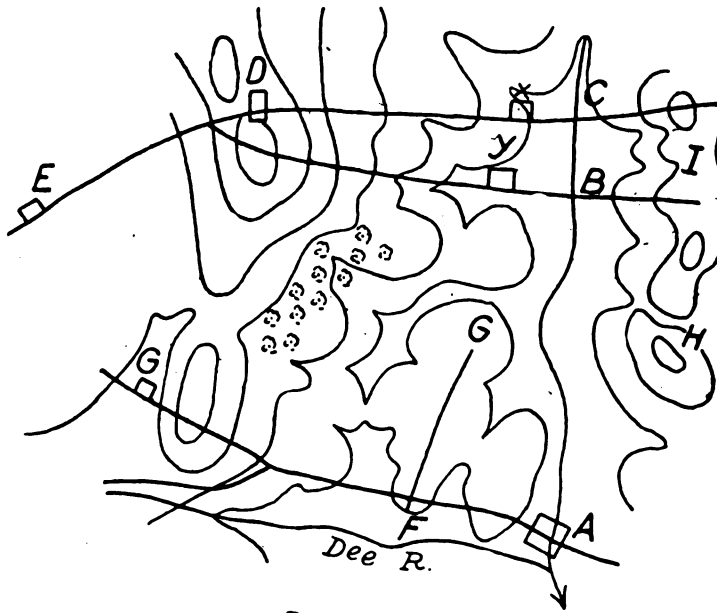

DIAGRAM 5 (Chapter VI A)

itself open to being delayed by a few hostile troops, without being able to check in any measure the advance of the enemy's main body. In either case the left flank guard has its line of retreat seriously threatened, and in case of misfortune the offensive is liable to end with the loss of the only footing the eastern force possesses on the bank of the river on the enemy's side. Consequently, the best solution is to occupy a defensive position on the line *GF*. In this case the left flank is protected by the Dee River. The right flank is exposed, but the artillery from the rear of *H* can give the desired protection; besides the advance of the main body would render an attack against the right flank improbable, as artillery and machine guns from the left bank of the river could enfilade the enemy's lines.

For the defensive, there are the following advantages in this case: Should the enemy ignore the presence of the division the latter would continue to dig in and would convert its position into a formidable bridgehead which could be reinforced by troops from the main body,

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thereby finally securing the crossing of the river. If, on the other hand, the enemy should decide to advance against the left flank guard the resistance of the latter would have to be overcome by a frontal attack only, and would consequently necessitate the use of so many of the enemy's troops that the main body, while effectively assisting by means of the fire from its guns from the rear of *H* and *I*, would have a reasonably good opportunity to force a crossing at *C* and *B*.

This situation exemplifies a case, which is met in practice, of a small column occupying a defensive position without running the danger of being out-maneuvered by the enemy.*

Thus we might go on and without number indicate many different concrete cases where the defensive must be taken up. In any long battle line there are bound to be defensive situations at some parts and offensive situations at others, but the main point to be borne in mind is that the defensive in itself must be chosen only as a means leading to some future offensive or it must be forced upon us, due to our inferiority in numbers. In other words, as stated in the opening paragraph of Part II of the *Infantry Drill Regulations*, "The defensive is a form of action to be deliberately chosen only for the purpose of economizing troops on a front where a decision is not sought, in order to concentrate superior forces at the point of decisive action," and then is added the sinister sentence, "The defensive may, however, be imposed by the situation." It is seen from the foregoing that we must never deliberately enter upon such a course as taking up the defensive except with the idea of placing superior forces against the enemy at some other point, but the very situation itself may cause the defensive to be entered on by our troops without regards to our particular desires in the matter.

Important Considerations in Defense

The defense must be *mobile* and also *flexible*. These two statements mean almost exactly the same thing. In order to be mobile we hold out reserves, so as to be able to

*Adapted from Burde's *Tactical Principles*.

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meet the attack when it develops, make a counter-attack, and assume the offensive, should occasion demand.

By being flexible is meant that the defense must not become, in stabilized warfare, so addicted to its habits and performances as to be unable on occasion to take the offensive or, if assailed by superior forces, to defend itself properly by an orderly and well conducted retreat. Further, in order to be flexible, the permanent organization of our military forces, which is an organization built on what is required for the offensive, should not be disrupted and changed to conform to the exactions of stabilized warfare, however long it may endure.

The *depth* of a position means the distance it extends from the front to the rear. We hear a great deal in both the offensive and the defensive in regard to distribution in depth. The depth of any position depends, in a measure, on its frontage. For instance, if we extend a battalion entirely on one line it would occupy a front of something like 5,000 yards, but it has the disadvantage that it is everywhere weak; if pierced at one point, the whole fabric would have to give way. Consequently, such a disposition would never be made. If, however, the battalion is arranged with certain units in the front and certain in the rear, we find that we can extend to the rear to just such an extent as we omit extending the front. By doing this we hold the front in greater security, for the line is not weak. It can be supported by elements from the rear.

One of the greatest advantages of a position with depth to it is that the rear elements may be used against an envelopment or against a penetrating force.

To distribute the troops in depth is to arrange the various elements, one behind the other, so that those in rear may support those in front. One may make the error of distributing troops in depth to too great a degree, but this is not so great a mistake as to do the other thing, to occupy too wide a front for the troops that one controls.

In the attack *reserves* are always held out. These are for the purpose of turning, enveloping, or penetrating in accord with the will of the commander. However, it is to be noted that in a long battle line heavy reserves for interior divisions are not always so necessary as might be

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imagined at first glance. Assume we are considering a holding attack being carried out by a wing consisting of several divisions while an envelopment is being made by another wing. An interior division of the holding wing does not need a heavy divisional reserve and, if it is holding a narrow enough front, will scarcely need a divisional reserve at all—the reserves for the counter-attack being held out by the brigade, which has no enveloping to do

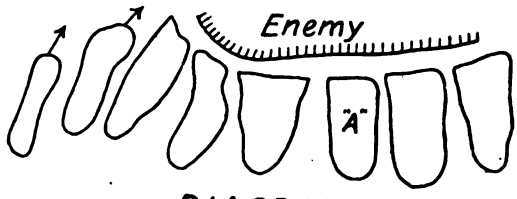

DIAGRAM 6 (Chapter VIA)

in any sense, and there is but little danger of the enemy breaking through. (See Diagram 6.) In division A we have a narrow frontage occupied by a division which we assume to be of normal strength. There is little or no reason to expect any penetration and no possibility of this division effecting an envelopment unless it be taken from its place in line and introduced at some other point. As there is no penetration required of it, the lack of need for reserves of a divisional nature is apparent.

Now change the situation and assume a division acting on the defensive and alone. A large reserve, well in the rear, is necessary because it will enable the division commander to meet the attack in force at a decisive point (see Diagram 7).

This divisional reserve should be held well to the rear so that its employment can be easily managed. One can readily see that if the reserve is jammed close up against the front line troops and they are attacked heavily, the reserves would have to move to the rear so as to come into the action with the right direction. (See Diagram 8.) In *A* we have the case of the division reserve jammed close up to the front and in order to get it into action it has to move by the left flank and then deploy "on right into line"

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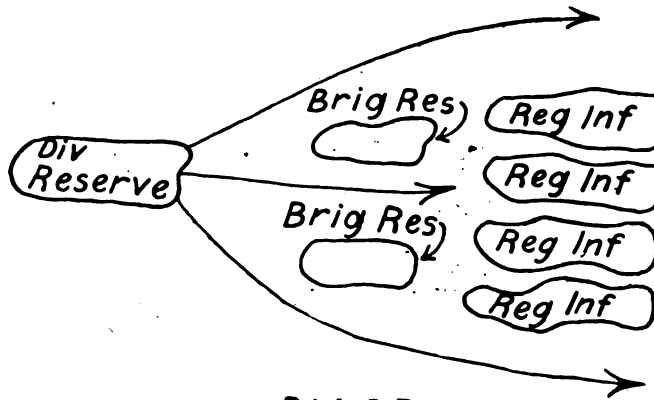

DIAGRAM 7 (Chapter VI A)

as it were. This is a dangerous and inexpedient thing to do when by better and more judicious forethought the reserve could have been placed some distance farther to the rear and then could have moved almost straight to the front and struck the oncoming enemy's enveloping wing as it arrived on the ground. (See Diagram 8 b.)' This is distribution in depth.

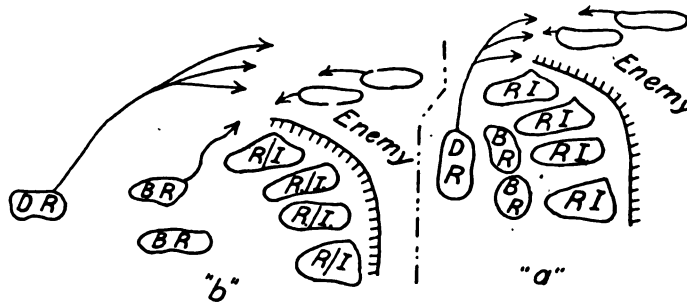

DIAGRAM 8 (Chapter VI A)

One point to be remembered in the subject of reserves is that the commander of troops in a defense should not heed every loud call for reinforcements. Some subordinate commanders are prone to call for reinforcements when as a matter of fact they have troops enough on hand to care for the situation. The commander who is led into expending his reserves by heeding every call for more troops will

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stand a good chance of finding himself at the critical moment with no reserve left to meet a fresh attack.

The reserves are held back for another reason also. They afford an excellent tool for the counter-attack. In fact the situation shown in Diagram 8 is in reality a counter-attack initiated by launching the reserve against the flank of the enemy's main attack. It is by means of the successful counter-attack that we can change from a defensive to an offensive policy.

In the case of the passive defense, reserves for the purpose of protecting the flank are essential. Local reserves along the line for the purpose of expelling hostile penetration are also necessary, but the heavy reserve required for a counter-attack is not necessary, and the troops that would ordinarily go to make up the heavy reserves, would properly be better used in extending the front and adding to the local reserves.

In the active defense or defense seeking a decision, heavy reserves well to the rear should always be held out.

Under the subject of *counter-attacks*, which is closely allied to that of the reserve, we find two different classes. The local counter-attack is one taken part in by the local reserves. Assume that some particular part of the line has been driven back by the enemy and one or more of our strong points have been occupied. The local counter-attack takes care of this situation. The enemy is automatically assailed by the local reserves. These may be battalion or regimental or even brigade reserves, depending on the size of the penetrating force.

The main counter-attack is the one undertaken when the direction from which the enemy's main attack is coming has been ascertained. This direction cannot be determined until the action has been in progress for some considerable time. This is the question most difficult to solve. When and where shall the counter-attack be made? It will generally happen that during the course of an engagement the enemy's action will disclose his intentions, and the point at which his effort is being made will become apparent. If the surmise is correct, it is time to get busy with the counter-attack. If one has made a mistake he is lost, for when his reserves are gone and what was assumed to be the main

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effort turns out to be only a holding engagement or a ruse, and the main effort now becomes apparent, one has nothing left with which to meet it.

If the enemy's main effort becomes apparent at a point say *A* (in Diagram 9) while we believe our line at b can hold but not advance we would probably direct our counter-attack on *C* with a view of driving the enemy backward from his line of retreat (towards *D*) and also to force him against the mountains.

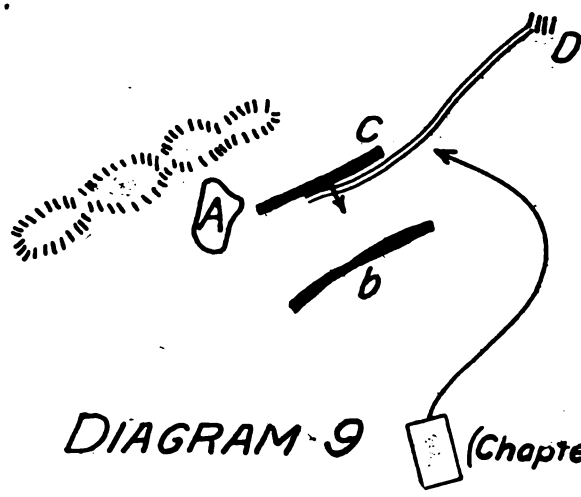

DIAGRAM 9 (Chapter VIA)

On the other hand, many occasions will arise wherein the counter-attack would be directed against the enemy's main attack.

An important consideration which is always present in most forms of the defensive is that of the *overhead fire*. This of course relates more intimately to the use of overhead fire by the machine gun than by any other arm. Overhead fire in the defense can, however, also be used by infantry when the ground lends itself to such action although it is usually known by another name—two tiers of fire. In consequence of the great effect that may be obtained by the use of overhead fire of either description if there is any choice of position, locations calculated to permit such overhead fire should be utilized. A point which must be remembered, however, is that when the use of indirect fire of

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machine guns is contemplated there should be available some time necessary for its preparation and adjustment. Reconnaissances for positions from which it can be employed will have to be made and exact knowledge as to the location of all our troops that might be affected by the same will have to be had. Indirect fire will consequently come in more frequently in the case of a stabilized or semi-stabilized situation than in a position hastily taken up, but overhead fire of infantry, automatic musketry, or machine gun, can frequently be taken up with little or no preparation.

The argument has been made that *advanced posts* in front of a defensive line were permissible while *advanced positions* were sources of great danger. This principle is a source of considerable confusion on account of the fact that one must get a real definition so as to know the exact distinction that one should make between an advanced post and an advanced position. An advanced post is a detachment, weak in itself, sent to the front to hold some point of local importance, possibly for the purpose of delaying the enemy in his advance or possibly for purpose of observation. It is an element of the main defensive line but in advance thereof—however, not so far in advance that it cannot be covered by rifle and machine gun fire from the main defensive line.

Several of these advanced posts might deceive the enemy into imagining that he is up against the main line and thus cause a premature deployment.

The real rule in reference to these detachments is not one of terminology, for it makes no real difference what such a detachment may be called. It would appear that the term *advanced post* would seem to be more properly applied to a small detachment temporarily in front of the main line, whereas an advanced position is one that should be applied to any position organized for defense, in a permanent or semi-permanent way, and in front of the main line. The difference is also one of numbers in the detachment, and whether or not it is possible to protect it from rifle and machine gun fire from the main line. A small force forming an advanced post can do no harm in front of the main line and may accomplish considerable good. An ad-

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vanced position ahead of the main line consisting of a force of some size, such as a couple of battalions or more, is not an advantage. This force is going to be forced back. From the very nature of things this proceeding is to be expected and if it is sufficiently strong to have some fighting power inherent in it, it may hold on so long as to become hopelessly engaged and then an orderly retreat will be an impossibility. We have then lost a unit of our command and gained little or nothing for it. The general rule in all tactics, offensive or defensive, is to make each unit you expend pay for itself. Make it give an equivalent return for its loss every time. There may be occasions when the loss of a unit such as described above *will* pay for itself in time gained, and, if this be the case, in a particular situation, one should unhesitatingly violate the rule and use one or more advanced positions; but the general run of events is such as to militate against their use and accordingly the rule has grown up as follows:

> **Troops detailed to hold advanced positions temporarily or to act temporarily on the offensive as in a small local counter-attack should be made so weak that they possess no inherent fighting power.**

As a rule it is not advisable to hold advanced posts beyond effective rifle or machine gun range or where they cannot be supported from the main line. If it is unavoidable that they be sent out they should be as weak as is consistent with their mission; because the stronger such detachments are the greater is the danger of their becoming seriously engaged, and then they run the risk of becoming so seriously engaged as to be unable to withdraw. Other troops have to be sent forward from the main line to extricate them; and these in turn become engaged so that finally the entire body of the defense may be drawn out of its position and have to stand for a battle in advance of the line on which it was originally contemplated. On the other hand, should the advanced detachment be well defeated and be forced to retire by a superior force of the enemy, if strong, it may hold out so long that its retreat, instead of being an orderly withdrawal, may be a rout, and a portion of our main battle position may be carried back with it.

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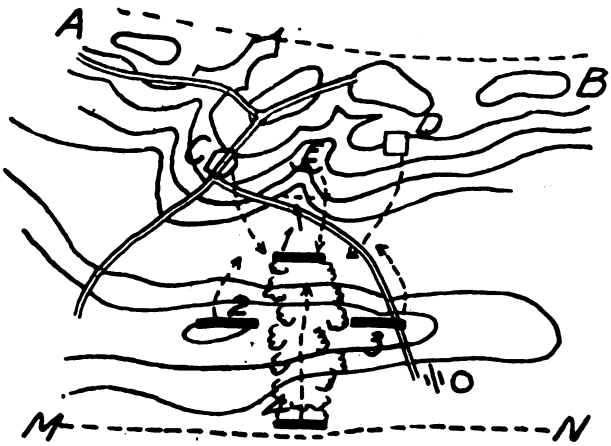

DIAGRAM 10 (Chapter VIA)

Assume a defensive position (in Diagram 10) to have been taken by a force along the general line *AB*, but detachments large in size have been placed well forward at the villages of *C*, *D*, and the trench at *E*, making in all an advanced position of some considerable strength and beyond rifle and machine gun fire from *AB*. An attacking force is advancing on the line *MN*. One battalion attacks on the right of the woods, one in the woods, and one on the left of the woods. A formed reserve is held in the rear of the woods and a battalion of artillery is at *O*. On arriving at the edge of the woods the commander of the center battalion, which we assume has made better time than the other two, attacks the trench in his front and becomes involved in a fierce fire fight with *E* and is enfiladed by both *C* and *D*.

This battalion cannot advance and is forced back into the woods, hotly pursued, by a heavy counter-attack from *C* and *D*. In the meantime, due to the arrival of the right and left battalions on either flank, and the reserve battalion from the rear and an intense artillery fire from *O*, the enemy gives way and is forced to fall back in considerable disorder. This disordered mass will pile back on the main line closely pursued by the attacking force and the prospects are that a considerable dent will be driven into the line *AB* by the action.*

*Adapted from Burde's *Tactical Principles*.

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On one point there must be no confusion and that is between the advanced post and the outpost system. They may merge in cases one into the other, but the distinction is that the outpost system is there to observe, and to put up enough resistance to determine whether or not an attack is actually being made. The advanced post is to hold some important point or rather some point from which, were we to neglect it, the enemy could observe our line. It may, like the outpost, also be called on to observe.

Among the most important considerations in any defensive position are the points *observation* and *communication.* Both these will be more thoroughly discussed under the subject of the position itself.

In general the organization of the defensive is based on *machine gun fire,* although our drill regulations contain the statement that the distribution of machine gun units depends on the tactical situation and varies with the distribution of the units they are calculated to support. In so far as the distribution of machine gun units being dependent on the tactical situation, no question or confusion can be raised. Everything is dependent on the tactical situation, but the statements, both of which appear in our drill regulations, "that machine gun units are varied with the distribution of troops they are called on to support" and that the "machine guns form the basis of defensive organization" do seem to contravene one another. If the first proposition is considered carefully as an item by itself, the whole becomes clear. When machine guns are designated to support certain troops then as a matter of course they are located in accordance with the location of those troops. In other cases the general rule that the machine gun fire forms the skeleton of defensive organization holds true, but of course not without exceptions. In stabilized warfare the machine guns will almost invariably form the basis of the defensive, and also in taking up the defensive in open warfare. In cases where any appreciable time for their proper emplacement is available, machine gun fire will form the basis of the defense. In other cases, the lines of observation and resistance will rest on the principles of the proper use of the musket and the automatic, coupled with consideration of the observation necessary for the artillery.

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Thus we see that in general for the outpost zone, we will have a line of supporting points, armed with the automatic and the musket and each of these so disposed that they can each cover the front of the similar group to the right and the left, riflemen being placed where dead spaces occur. Behind this is the outpost line of resistance and on this may be located riflemen, automatics, and machine guns. The same general rule still obtains that each must cover the front and flanks of the contiguous groups. Above all in the outpost zone must be understood the important rules covering the withdrawal of the outpost to the zone of resistance when it becomes apparent that the advance of the enemy is of such magnitude that the outpost zone is to be penetrated. Some definite, well established covered ways should be decided on so that the retirement of the outpost troops will not mask the fire from the zone of resistance.

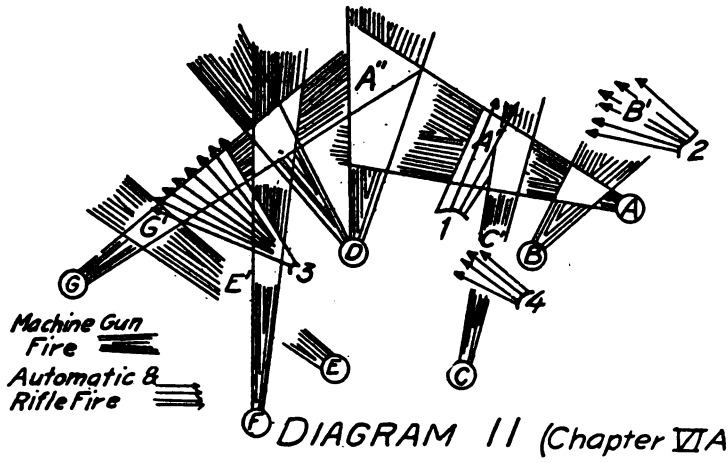

DIAGRAM 11 (Chapter VIA)

Now comes the zone of resistance. It consists of supporting points as before composed of combat groups, of machine guns, and automatics. These are not located on one line, but may be irregularly spaced so as to cover the front and flanks of groups to the right and left. Thus (in Diagram 11) the machine guns at *A* are dead at *A'* and this area is covered by riflemen or rather by an infantry combat group at *1*. *B's* band of fire is dead at *B'* and is covered by the combat group at *2*. *A''* is covered by the

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machine guns at *D*. Fire from *G* is dead at *G'* and is covered by the combat group at *3* and the machine guns at *E*. Machine gun fire from *C* is dead at *C'* and this area is in a like manner covered by a combat group at *4*. Thus is the defense built up step by step. Hurriedly, at first, when little time is available, but more in detail when the enemy permits and there is time, the extent of the field of machine gun fire from each supporting point can easily be figured with the result that there will develop a complex system of crisscrossing fields of fire which it will be very costly for any troops to pass.

The *artillery* from the positions farther to the rear than the line of resistance is so distributed as to be able to cover each and every part of the front. In the position hastily taken up the artillery will have to depend on its observation for the accuracy of its fire, and later on, when things have become more stabilized, the action of this arm is a matter of routine.

Arrangements are made by the artillery for the proper placing of protection barrages, counter-preparation and counter-battery work.

The location of the elements of this arm is dependent on three things, observation, positions, and communications. By positions is meant favorable localities which will permit this arm to reach with its fire the necessary points that are to be covered. Communications are essential on account of the amount of ammunition this arm can expend. Of these three considerations that of observation is the most important.

The artillery is frequently dispersed in the area to the rear so as to make it difficult for the enemy to locate the same. This dispersion has no great deleterious effect in the case of the defense as signal communications can generally be arranged.

Locating the artillery well to the rear is advisable so as to be free from the likelihood of losing guns. If they are located well to the front, they may be lost in the case of a sudden and well directed penetration on the part of the enemy.

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Reconnaissance must be looked at from two points of view.

(a) When the command is on the march and has made its first contact with the hostile forces.
(b) When the command is in a defensive position and has been there for a considerable period of time.

In the first situation the reconnaissance will have to cover two features, the enemy and the terrain. For it is on these two, taken in connection with our mission, that a decision is built. In general, reconnaissance is the heart and soul of all military operations, and a commander who is not properly served by those whose business it is to furnish him with information will fight hopelessly in the dark, and probably will lose out, even though he may have superior forces.

The subject of reconnaissance has been previously treated. It remains here to emphasize the things to be sought and reported which are rendered important when acting on the defensive.

In any war, no matter where fought, there will be a time at the beginning when the hostile forces are *not* in contact; and it may happen that in later phases of the war, contact will be lost, and troops will be in practically the same situation in regard to each other as they were when the war began. These points, due to the long continuance of stabilized warfare on the western front, in the World War, we are prone to forget.

If we bear in mind that there will be a time when there has been no contact or when contact has been lost, we can visualize a situation in which many a commander will be placed in wars yet to come. Assuming that our mission is such as will require us to assume the defensive on contact with the enemy—the rest becomes clear at once. What we want is information of the enemy and *also of the terrain,* for it is on these two things that our defense will rest.

Of the enemy we have to know his direction, location, movements, intentions, and, as he comes closer, the strength he possesses in the different arms. This information will be furnished by agents of reconnaissance. Air service and cavalry will be predominant branches in furnishing the information required when the distances are great, and

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as distances diminish the infantry brings in the results of its nearby reconnaissance. Information as to the terrain is also required because one cannot obtain all necessary data in regard to the terrain from maps; and the strength, movements, and intentions of the enemy, coupled with a clear conception of the ground to the front, causes us to determine where we will take up our defensive position. If the enemy is at *A*, three marches from a position at *B*, which we know would be ample for our purposes, and we are two marches from *B* but near a position *C*, which almost suits our purpose, we have to determine whether the natural advantage of *B* weighs so greatly that we can afford to use two days for deployment and preparation of the position or whether it would be better to go into the near position at *C* and spend the five days allowed us thereby in

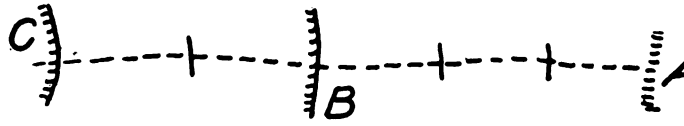

DIAGRAM 12 (Chapter VII A)

thoroughly organizing the same for defense. This problem is one in the skeleton only, and necessarily would have to be solved by a careful comparison of all the attendant circumstances, but enough has been said to indicate the necessity for reconnaissance in such a situation so as to cover not only the enemy but also the terrain.

In the next case, the one wherein contact has been made and we have deliberately gone into a defensive position, we have to look at it from several points of view.

(1) If we have assumed a defensive position while the enemy is still remote from us, our reconnaissance is principally directed toward learning his strength, composition, lines of advance, and his intentions. This will be done by intense patrolling well to the front by the cavalry and through a judicious use of the air service.

(2) In case the enemy is in close contact our cavalry will be mostly used against his flanks, for by this means we can get timely warning as to his method of advance. Aviation should also materially contribute to this end, and also by no means should deep patrolling and raids to the front be dispensed with, for by these we may ascertain a contemplated hostile frontal attack.

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(3) In stabilized warfare where we have occupied the front for a considerable length of time, our information will be furnished us principally by observation posts, balloons, reconnaissance, raids, infantry patrolling and aviation and these must be in continuous activity.

So far the reconnaissance has dealt with what might be called preliminary situations, save only in (3) above Actually during the action also, combat reconnaissance must take place at all times. In fact to speak broadly, in war, from the time the declaration of war is made to the time hostilities cease, there is never an interval where reconnaissance can safely be dispensed with, and in fact we may say that reconnaissance is going on all the time if we include in its scope the operations of the intelligence services in time of peace. Combat or battle reconnaissance is of especial importance, for being on the defensive, we have to play according to the enemy's lead and the sooner we ascertain the methods which he is featuring in his attack, the better will we be able to meet them and launch our counter-attack.

Patrols to the front are a never failing source of information as to the condition in the enemy's immediate front. For information farther to the rear or more definite information than that which can be produced by the patrols, we have recourse to raids and for clearing up the situation, a reconnaissance in force.

Developments, Approach March, Deployment and Frontages

In the defensive one may have a *development* or one may not. In the attack the development practically always is a part of the maneuver but defensive situations can be conceived wherein a development will not be necessary. A development is the "breaking up of a command into fractional columns and marching them on a designated objective or the enemy." This was the definition given in the General Discussion of the Offensive and the same definition will hold also for the defensive only that we erase the last three words. The development is a formation forced on a command by the fact that it cannot fight in column. Since neither the offensive nor the defensive can fight in column, it is necessary that a line formation be adopted prior to the

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arrival in the zone of fire of the enemy. This is begun by the development, carried on by the approach march and completed by the deployment.

In the offensive, certain large units as brigades or regiments are directed off the axial road, via different routes on certain points of the enemy's line. When they have arrived at the required distance from the axial road and are moving via their proper routes on their prescribed objectives the development is in operation. It may be that for purposes of co-ordination a "jump-off" line or line of departure is given. This is the general line from which our infantry attack is to be launched. In a similar way we have such a line in the defensive, but it is not called the "jump-off." It is the line on which our advanced troops are to form. For the purpose of reaching the "jump-off" the attack uses the development and the approach formations. For the purpose of reaching our advanced line of defense, it may be necessary for the defense to use the same formations. In the latter case the development would consist in dividing the command into bodies of subordinate units to each of which would be assigned a sector or subsector and directing these on some objective which would bring them into the area to which assigned. The development would be used for two purposes in this case. It brings the command into its sector, and also it places it in a formation from which it can readily be changed into one of smaller units, i. e., a line of smaller columns—in case of encountering hostile fire.

In case where a sudden attack of the enemy is expected, an early development is something to be adopted, for by it we reduce the deploying time the same in the defense as in the attack. Its disadvantage is that it may cause troops to move across country for some considerable distance, but this is not so serious an objection in the defense as in the attack.

The development should not be initiated until the general direction of the defensive line to be established has been determined. If this rule were neglected or overlooked, unnecessary marching would certainly result, for some troops and in fact all would probably have to go to some unnecessary distance. Diagram 13 shows several columns

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advancing in a development towards the line AB, the original direction of march being shown by the broken lines. Word is suddenly received that the line to be taken up is *CD*. This calls for a complete change of direction on the part of column *E*. *F* is split in the middle so as to get the advantage of a road to the northeast. If this column moves to the front it will be in the way of the column *G*. *G* also has to be split like *F* so as to march on its proper section of front to the northeast, and in a like manner were *G* to move to the front, it would block *H* and not come up against its proper portion of the line. The change for *H* and *I* is not serious, but it involves a longer march.

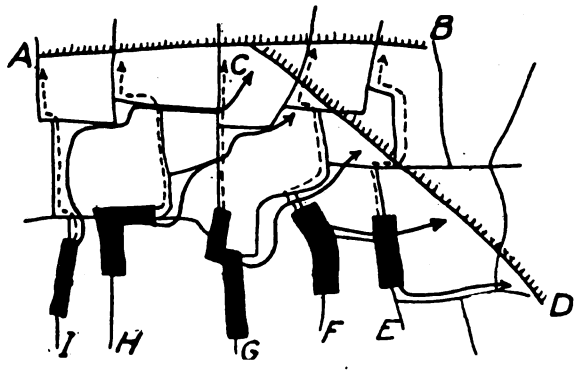

DIAGRAM 13 (Chapter VI A)

The principal point to be remembered in a development for a defensive position or in the defensive, is that as the several columns are to be assigned sectors which they are to hold, their march itineraries must be drawn up so that the main bodies will travel along roads, paths or covered routes in or near the middle of their sectors. It would not be an error to give them a compass direction provided the same is computed from an accurate map and given as follows: "Compass bearing from such and such a point so many degrees." The reason for this is that if a compass bearing is given but the point from which it is to be used is not given, the command may go entirely wrong by attempting to use the bearing from some other point from which it may be

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useless. This proceeding may bring a command into another sector.

The development naturally evolves into an *approach march.* In other words, the large elements of the command which have heretofore been moving forward on their assigned direction lines now begin to split into smaller units thereby spreading the command over more and more terrain and consequently presenting to the enemy less and less vulnerable formations as the battle front is approached.

As a general thing, the larger elements in the development may be easily directed by means of roads, but when the approach march is initiated the roads would have to be exceedingly numerous in order to supply one for each element, and accordingly most of the smaller fractional parts of the command will have to march across the country. This is one of the reasons why the change from the development to the approach march should be deferred to as late a moment as is practicable consistent with safety. Also there enters the important point of a compass direction so that the various small columns may keep on routes parallel to the main line of advance.

When the leading elements are on, or in rear of the line to be held, the deployment comes and this may mean a deployment as described for the attack or again it may not. In the general case it would be similar to the deployment for an attack but different in that the front line would not be held necessarily by troops of equal density throughout. The front might be held in equal density at the start if the case were one of open warfare and the defense taken up only after a hasty reconnaissance.

In our *Infantry Drill Regulations* it is stated that "a position should not be defended as a rule by an occupation in uniform density along the entire front, but rather by holding in strength the tactical localities which constitute the key points of the position and by providing for the main defense of the intervals between such points by flanking fire and counter-attack." Thus one can see that on suddenly taking up the defensive, it would at first be held by a line of uniform density throughout, and then as the different strong features of the positions become apparent troops will

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be withdrawn from certain positions of the line to support or to reserve echelons, or placed in the line at such important key points as may be necessary to cross fire in front of the main defensive line.

Beside affording flanking fire, one across the front of the other, these combat groups protect certain important pieces of terrain to the rear such as road junctions, villages, observation posts, etc. The deployment should be so undertaken and troops in the several sectors so disposed, as to hold strongly the key points and thereby prevent the enemy from making any deep penetrations of the position. When penetration is made he is to be rapidly thrust out by the action of supports and reserves assisted by the action of the key points to the right and left of the point of penetration. In case of an envelopment the key points should be so disposed as to mutually protect each other and bring the holding attack to a halt, and thereby permit the bulk of the troops to be used in the counter-attack.

The deployment must be made with reference to a line of resistance which is defined to be the line which must be held by the troops of the defense. This line of resistance may be in, or contiguous to the outpost system, or it may be at various locations in the rear of the same, so it is seen that when deploying for the defense, we deploy with reference to two lines as in the attack. In the attack we use the "jump-off" and the enemy's line. In this defense we have the outpost system and the line of resistance. Resistance may be offered on the outpost line or on the line of resistance, or in advance of the latter, and under some circumstances in rear of the same, but the line of resistance must be held by our troops by the end of the fight.

Tactical supporting points as a matter of course are not all to be in the front line. In fact many of them might be held well to the rear for use against a deep penetration or for overhead fire or indirect fire against an enemy a sufficient distance away to permit one to take advantage of this kind of fire.

Paragraph 566, *Infantry Drill Regulations*, covers this deployment in so far as the distribution in depth of the command is concerned. It reads as follows:

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> The troops of the defense are disposed in depth varying with the tactical situation. The objects to be accomplished by the distribution in depth are:
>
> (a) To provide security and gain time for manning the main line of resistance.
>
> (b) To avoid concentrations which would expose the defensive forces to excessive losses and neutralization by hostile fire.
>
> (c) To limit the effect of surprise attack and to permit the offering of lines of resistance to a flank.

As shown above, the defensive position is *held* by an advanced line or lines which is the outpost zone or system. This advanced system will be capable of considerable resistance and will be composed of a series of key points which mutually support one another. In the rear is the position containing the main line of resistance held by a series of supporting points arranged so that each mutually supports the ones on the right and the left. Farther to the rear and in the position itself would be supports and possibly the reserves so arranged as to avoid the concentration warned against in (b) above and yet near enough to be of assistance in case of hostile penetration. Also these are ready for use in the decisive counter-attack or to meet an envelopment, and, as pointed out previously, some echelonment to the rear is necessary for this purpose.

It will be noticed that in the *Infantry Drill Regulations* frequent reference is made to the deployment in connection with certain "zones." The zones referred to are the outpost zone and one or more defensive zones or positions. The outpost zone is one over which a single battalion or even a company in some cases may be extended in a direction from front to rear. As a matter of course, the outpost zone is a lateral belt with possibilities of having great lateral dimensions but is necessarily limited in depth. So a battalion or company may cover a section of the outpost zone and yet not extend back to the defense zone which comes in rear. The entire battalion, in other words, may be in front of the defense zone or position. It can thus be seen how a regiment or a brigade may be deployed so as to extend from front to rear over several zones especially where the defense may have an outpost zone with one or more defensive positions to the rear thereof. It is in the defense zone or battle position that the line of resistance

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will be located, although it must be borne in mind that there may be cases where there will be no outpost zone and the main line of resistance may be very close to the enemy. For instance, assume a large force to have taken up a defensive position along the bank of a river. In this case the line of resistance would naturally be coincident with the outpost line, and the outpost zone and the zone of resistance would be merged into one. Thus we see that the deployment will consist mainly in extending the leading organizations so that they will cover the front allotted to the command. For instance, as stated in the *Infantry Drill Regulations*, the brigade commander assigns sections of the defensive line of resistance, or subsectors of his defense area to his regiments, and allots to each of these its necessary quota of auxiliary troops. He also retains under his own control a reserve consisting of infantry and machine guns. He will direct the depth to the rear over which each front line regiment will be extended as well as the front right and left, on which it is deployed. This is necessary, as otherwise there would be a possibility of some considerable confusion in locating the reserves, both regimental and brigade reserves going into same locality.

On the brigade commander also devolves the duty of maintaining contact detachments on his sector boundaries. These are to keep him in touch with organizations on his right and left and also for the purpose of protecting the sector boundaries.

In a general way, the brigade commander supervises the location of troops and particularly is he active in this respect in all questions relating to troops on the flanks of his position. In other words, his influence should be greatest in directing the location of troops on the right and left of his brigade sector in such a manner as to insure that there will be proper connection made by his brigade with the brigades on his right and left.

Commanders of reserve units are required to make detailed reconnaissance of the entire brigade sector, thereby thoroughly familiarizing themselves with the same so that they will be able to lead their commands to any threatened location. In addition to this, they also learn the sectors on the right and left for the purpose of co-operation.

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If not provided for by the higher command, commanders will make such dispositions as will insure an outpost zone in front of their positions or at least they issue such instructions as will insure the necessary distant reconnaissance and patrolling as is necessary. Another most important function is that the brigade commander shall keep close touch with division headquarters.

A brigade in itself may be deployed in two ways. The two regiments may be placed side by side or one behind the other. Each of these methods is susceptible of being varied by regimental changes, which will be discussed under the subject of regimental deployment. It is not always expected, however, that the regimental commander is at liberty to select his particular form of deployment. This may be ordered by the brigade commander. When regiments are side by side, one or both of the rear battalions may be selected as a brigade reserve or one as a brigade reserve and one as a division reserve. (See Diagram 14.)

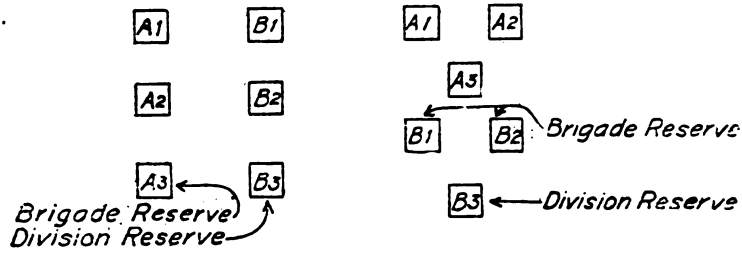

DIAGRAM 14 (Chapter VI A)

When we come to the deployment of the regiment, one would imagine that as there are more units in a regiment than there are in a brigade, the deployment of the regiment would afford more variations. This is correct, if the regiment always could count on having its three battalions, but in the general case, one battalion will be lost to the regiment, it being taken as brigade or divisional reserve. In the general case, then a regiment may, like a brigade, be deployed with both battalions side by side or one battalion behind the other. As, however, the regiment may at times have all three of its battalions, the deployments shown in Diagram 15 are given as showing the various formations into which a regiment may be put.

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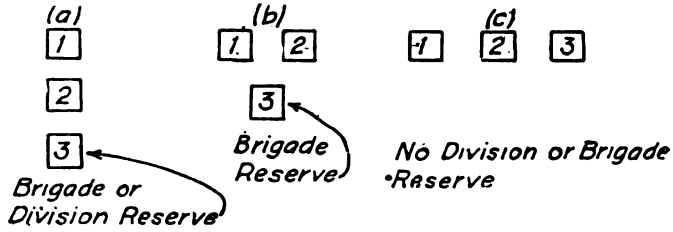

DIAGRAM 15 (Chapter VI A)

Diagram 15 (a) shows the formation adopted for the stubborn defense of a portion of the main battle position which it is expected will be assailed. (b) is a formation adopted to cover a wider front. The 3d Battalion, although marked as brigade reserve, may be a regimental reserve. This formation would be one possibly adopted at some part of the line which the higher command does not believe will be assailed or one which it is expected to hold for such a length of time as may be necessary for troops in rear to be prepared. (c) is a formation for an outpost zone or light defense only. It is an exceptional formation. On approaching his part of the line, the colonel either in conformity with the orders of higher authority or in accord with the front assigned him and the general lay of the ground, would determine the formation he is to adopt for his regiment. He designates the battalions that are to be the combat battalions. The combat battalions are given appropriate orders which direct each of them into its center of resistance. The colonel informs the command as to the limits of the zone of resistance or battle position and the location therein of the line of resistance.

The reserve battalion is generally to be given an area in which it is to be placed and it takes up there a position in readiness. Combat detachments are detailed to defend the boundaries of the subsector, and if time permits, the construction of works and obstacles commences at once.

The battalion in moving into its center of resistance, must march covered by advance patrols. The battalion is generally reinforced by a machine gun company and a section of Stokes mortars and one-pounders. The major with

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the machine gun company commander locates the sectors of fire of the machine guns and on these as a basis, he builds up his defense by assigning companies to strong points in such a manner that each captain may organize combat groups in or near the machine gun sectors, so as to cover all dead spaces in their fire as before explained under machine gun fire.

Certain companies are designated as combat or firing line companies and others as support companies. The combat companies are those that take their places in the front line and the support companies take their places in positions of readiness to the rear. As a matter of fact, however, one must not be mislead by the term, combat company, into believing that these companies are the ones to bear the brunt of the fight, for it might occur that the line of resistance of the position on which the battalion is deployed passes through the support companies, and consequently they would be the ones to do the actual fighting, the combat companies allowing themselves to be pressed back slowly to their pre-determined locations on the line on which the main resistance is to be made.

The mortars are placed in such positions as to enable them to cover dead spaces in the machine gun bands of fire. Especial attention should be paid to a proper location of the light mortars, so that important points which the battalion commander expects to be assailed may be covered.

The question of permissible *frontage* in deployment is influenced by so many factors that no set rules or principles should be laid down. The following are some of the factors which influence decisions in this connection.

Active or passive defense. In the active defense as the main objects are to hold the enemy in front while counter-attacking on the flank, considerable depth is required. In most cases this depth may be secured by a deployment insuring from four to eight rifles per yard of front.

In the passive defense the main factors relate to flank protection and duration of the defense. At the same time less depth is required, as other than local counter-attacks are generally not contemplated. In most cases the foregoing considerations may be met by insuring from three to five rifles per yard of front.

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Nature of terrain and presence of obstacles. The above factors play an important part in the solution of any situation whether the mission contemplates active or passive defense. Open country affording excellent frontal and flank fields of fire permits relatively greater frontage. The foregoing is also true in connection with obstacles such as rivers, marshes, etc. Considering in combination the duration of defense and the nature of the terrain and obstacles, it is sometimes practicable to defend on very extended fronts such as contemplated only one and one-half rifles per yard.

Time available for organization of ground. The time available for the organization of the ground will vary in different situations. In consequence of this the additional strength of defensive power secured by entrenchments, obstacles, etc., will also vary the permissible fronts of deployment.

As the organization of the ground is carried on in depth as well as along the front, the time available therefor naturally influences the depth of deployment. As a guide we may therefore say: in a defense with no time for organization of the ground the deployment should provide no less than four rifles per yard of front. Where three to six hours are available for organization of the ground the above figures may be changed to three and one-half rifles per yard.

Where six to twenty-four hours are available for the organization of the ground the above figures may be changed to three rifles per yard. Less rifles per yard of front than three may be warranted only by some exceptional conditions such as secure flanks, obstacles, or defense of short duration.

The guides given in the foregoing are based on normal organization. However, if a unit is materially reenforced by artillery and machine guns, which are determining factors in the defense, the number of rifles per yard given above may be somewhat reduced.

Considering all the factors mentioned above one may be guided by the following table for an infantry division:

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Situation	Passive Defense		Active Defense		Rifles per Yard
	Average terrain and obstacles. Flanks exposed.	Difficult terrain and obstacles. Flanks protected.	Average terrain and obstacles. Flanks exposed.	Difficult terrain and obstacles. Flanks protected.	
Deployed defense—no organization of the ground.	2500	3300	1700	2200	4 to 8
Position defense—3 to 6 hours for the organization of the ground.	3000	3500	2300	2500	3½ to 6
Position defense—6 to 24 hours for the organization of the ground.	3500	4500	2500	3000	3 to 5
Zone defense—Several days for the organization of the ground.	5000	6000	3300	4000	2 to 4

In considering the smaller units one should distinguish between the front to be covered in the deployment and the front to be covered by fire. While a company may cover by fire 800 yards of front, its normal deployment should be considered as about 300 to 400 yards.

Diagram 16 shows four forms of deployment of a division covering cases given in the table.

In *A* we have the passive defense in which the flanks have to be protected by covering detachments, which, in this case, have been taken from the flank regiments. To the right of the divisional deployment are shown the battalion formations of the front line battalions, used to cover the front allotted to the division.

B shows the front extended on account of the greater security of the flanks and, in a like manner, to the right, is shown the formation of a front line battalion covering a portion of the divisional front.

In *C* we have a deployment of the division in the active defense. The flanks are protected by covering detachments, taken, in this case, from the reserve brigade. A heavy reserve, it will be noted, is held out for the counter-attack.

D shows the division deployed in active defense with the flanks secure, thereby allowing a greater extension of front and also a heavier reserve.

These cases are to be taken as types only and by no means do they cover all the variations that may be introduced in the deployment of a division in the defense.

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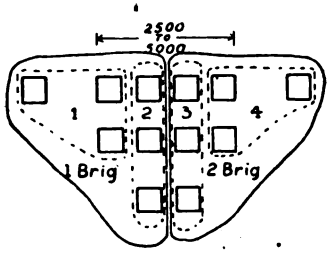
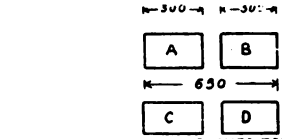
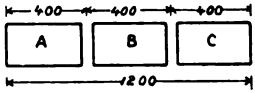


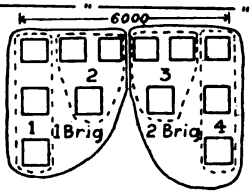
A. PASSIVE DEFENSE FLANKS EXPOSED BUT PROTECTED BY COVERING DETACHMENTS



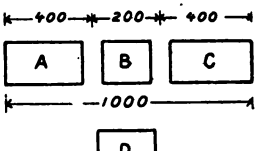
BN. OF FRONT LINE DEPLOYED FOR SHORT FRONTAGE



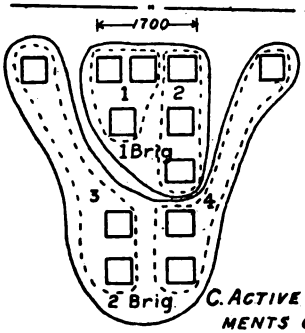
BN OF FRONT LINE DEPLOYED FOR MAXIMUM FRONTAGE

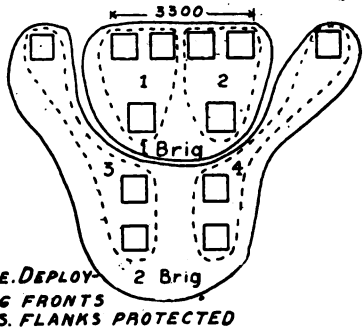


B. PASSIVE DEFENSE FLANKS SECURE AND POSITION WELL ORGANIZED

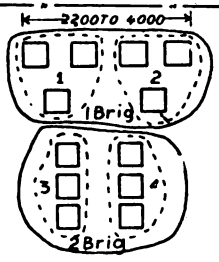


BN OF FRONT LINE DEPLOYED TO ATTAIN DIVISIONAL FRONTAGE OF 6000 YDS





C. ACTIVE DEFENSE. DEPLOYMENTS COVERING FRONTS 1700 TO 3300 YDS. FLANKS PROTECTED BY COVERING DETACHMENTS



D. ACTIVE DEFENSE FLANKS SECURE

DIAGRAM 16 (Chapter VI A)

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Positions, Single and Successive, Zones, Sectors

A defensive position assumed by a battalion differs materially from that of a division just as that of a division differs from that of an army but there are certain principles that apply to all or nearly all defensive positions.

There must in the first case be a covering area, covering zone, *outpost zone,* or *outpost system,* as it has been called. This is the element that is nearest the enemy. It may vary in size from a few patrols to a battalion. This is the outpost zone of the *Infantry Drill Regulations* and the outpost system of the *Engineer Field Notes No. 13.* The depth of this zone will vary according to the necessities of the case, but should be sufficient in most cases to prevent hostile terrestrial observation of the main defensive positions in the rear, while at the same time insuring our own observation. In large forces it should preferably hold the hostile light artillery out of range of the main position. This outpost zone should not be confused with an advanced position. It is not an advanced position and is calculated only to give sufficient resistance to develop the enemy's intentions; that is, to cause it to become known whether the enemy is really attacking in force or whether it is a demonstration, a reconnaissance in force, a raid, or a set of patrols we are dealing with. The outpost zone may have several lines such as lines of outguards, which would be organized into combat group, lines of supports, and reserves. It would also have within it, outpost lines of resistance, which, however, should not be confused with the line of resistance located farther in the rear in the zone of resistance or main battle position.

The outpost line of resistance is one at which sufficient resistance would be made to develop the enemy's intentions and also to afford time for the troops of the main defensive position to prepare for action.

Next we come to the main defensive position. This position may consist, as you see in *Engineer Field Notes No. 13,* of several lines, such as firing line, support line, and reserve line. This position is what is termed the *zone of resistance* of the *Infantry Drill Regulations,* or perhaps it would be better put if we say that within this position will be located the main line of resistance. The position

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may be considered in some cases to extend so far to the rear as to include within it the reserves, and these would have to come forward to enter the main line of resistance which, as has been remarked, is the line which must be in possession of the defense when the fight is over. This may be in the front part of the position, in the middle, or to the rear. The main position would properly be taken up along ground of natural strength. It should be sufficiently deep to permit of the proper handling of troops in the rear. The basis of organization in depth, or echeloning units to the rear, as it has been styled, is to provide for the combined employment of the several echelons and concentrations of artillery fire. The primary object is not to force the enemy to attack successive positions, but *principally to provide space and means for the offensive blows of the defensive*, i.e., *counter-attacks*. There is another reason also; this form insures against large losses during the *holding defense*. It insures continuity of the battle front and prevents surprise. In the *battle defense* it secures to superior commanders the ability to maneuver both by movement and by fire. The offensive advances in depth, the density of the same varying along the whole front. The defensive meets this condition by corresponding depth arranged for the necessary concentration in opposition. This is provided for by a division of the front in width and depth into sectors, positions, etc.; counter-attack units, increasing in size from front to rear, are held for concerted action. These positions, sectors, etc., are held by complete units, corps, divisions, etc., closely associated and prepared to act in accordance with a definite counter-attack plan.

So much for the main position. Now if the line is long and the command large, there will be in the rear a second and perhaps a third position. One of the governing ideas in the location of the second position, is that it should be sufficiently remote from the first to obviate any possibility of the enemy's artillery placing a preparation fire on both at once. The second should be at such a distance in rear of the first that should the enemy capture the first position he will have to move the bulk of his artillery forward so as to permit it to reach the second with its fire, and this takes up time and causes confusion during the movement.

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The distance is six to eight kilometers, possibly more rather than less.

These positions are termed *battle positions* and thus we see that as we go from the front to the rear, we pass first through the *outpost system*, with its line of observation, line of supports, line of resistance, and line of reserves. Then we come to the *first battle position* with its firing line, supports, reserves, and then back a distance of six to eight kilometers, we come again to a *second battle position* containing within it the firing line, line of supports, reserves, the same as those of the first battle position, and in rear of this may come a *third battle position* identical with the other two.

In the selection of the second and third positions, aside from being six to eight kilometers from the ones in the front, they should not be visible from the more advanced positions.

In addition to the foregoing we also have the *intermediate position*, and the *switch position*. The intermediate position may be for several purposes. It may be occupied by the brigade or divisional reserves of the division holding the first battle position and consequently will serve as a base of departure for counter-attacks. It may be located so as to guard points from which the enemy may observe the second battle position. These positions force the enemy to employ fresh troops to capture them and they also arrest the advance of local successes.

One of the principal advantages of the intermediate position is that it affords a means of fluctuating the defense. Surprise can be effected by changing the density of the first position. This is especially valuable when the offensive prepares its attack by a prolonged and destructive bombardment. So long as the enemy is deceived in regard to the density of the defense, he will have to prolong his destructive fire, and to scatter it so that less effect will be produced. Then again such an arrangement facilitates the employment of the artillery barrage of the defense. With the first position lightly held the occupants can retire in time to permit the barrage to fall on the attackers as they arrive at the first position. It may be advantageous at times to utilize the first position as an outpost system alone, and the intermediate positions to cover the main posi-

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tion in rear, or to cover the defender's artillery located between the first and second battle positions. The intermediate position will let the defender's artillery remain in action even after the first battle position has been penetrated and it then covers its later withdrawal.

A *switch position* is a flank or oblique position which serves to connect up an advanced battle position with one in the rear, and it thereby serves to present an unbroken front to the enemy in case the advanced battle position is penetrated. It also serves to hold up any lateral advance of successful hostile detachments and forms a parallel of departure for a counter-attack. They may be perpendicular to the advanced battle position, but generally are oblique thereto. They may also serve to connect the first and second battle positions with an intermediate position. They should be well covered with obstacles but these with suitable openings for the counter-attack.

Thus far, the defensive position, or successive positions, have been described in a direction from front to rear. There is also a lateral terminology to be acquainted with.

In a large defense a zone will be assigned to an army. It will be called the *army defensive zone.* The *army defensive zone* will be divided into sections and each assigned to a corps. These subdivisions are called *defensive zones.* When one speaks or writes of a *defensive zone* it is understood that he refers to that part of the army defensive zone that has been assigned to some certain corps to defend. The defensive zone is subdivided into *sectors,* and each of these are assigned to divisions. Now when we come to the question of dividing the *sector* we find that we have but two brigades in a division. If these brigades are to be placed on the line, side by side, they will occupy a *brigade sector,* but, as is frequently the case, a brigade will cover the entire divisional front, while the other brigade of the division is held in reserve in the rear. In this case the brigade on the front line occupies the divisional sector and there is no subdivision thereof. In the other case the subdivision of the sector assigned to the brigade is known as the *brigade sector.* The *brigade sector* or the *sector,* should a brigade be occupying the divisional front, is subdivided into *subsectors* and these are assigned to regiments. When-

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ever one speaks or writes of a subsector it is understood that a regimental area is meant. In each subsector there will be a certain number of *centers of resistance.* These are subdivisions of the subsector, prepared for defense, and each held by a battalion. The center of resistance is the proper command for a major, and while it is stated that each is held by a battalion, the rule is by no means inflexible. Like all military principles it is subject to change in accord with the situation, and while we may see a center of resistance held by two or by six companies, in either case we would properly expect to see it commanded by a major. The center of resistance may be considered as the works occupied by a battalion to cover its portion of the regimental subsector. In smaller units than brigades the term sector may be used for convenience when necessary to define the area of responsibility or sector of fire assigned to a unit, as battalion sector, or platoon sector.

The center of resistance is an aggregate of *strong points,* each occupied by a company, and the company's strong point is in turn an aggregate of *combat groups,* each being either an entire platoon, or a section; perhaps, in some cases, less. Thus we see the platoon commander organizes his combat groups, and these are consolidated into the company's strong point, and so on up to the highest command. One must not become confused by the multiplicity of terms used. It must be remembered that in each position there may be several lines, and in most cases there would be. Thus in the outpost system, position, or zone, or whatever term it may go by, we will have a line of observation, a line of resistance, a line of supports, and a line of reserves.

In the main position, or first battle position, or in fact in any battle position, we have the firing line, the support line, the battalion reserve line, the regimental reserve line, and so on. These lines and some more even, the brigade reserve line and possibly the divisional reserve may be all in one battle position in an exceptional case, although in most cases the reserves of the larger units will be found more likely in rear of the battle position.

As indicated in the foregoing, the defensive zone is organized into several positions in depth, each of which is completely organized for defense. These positions are the

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first battle position, the second battle position, etc., counting the one nearest the enemy as first. The various positions designated by the corps commander determine the defense position in each divisional sector. While each divisional sector may have within it two positions, the corps commander may find it desirable to prepare other positions to the rear of those in the sector for use as later developments may dictate. These latter positions are generally prepared by reserve divisions and labor troops. They meet the conditions incident to a forced retirement and form new sectors for whatever divisions may be assigned thereto.

The general location of the various battle positions are designated by the army commander, who insures connection and mutual support between corps. The specific terrain features to be included in each battle position are announced by the corps commander, who is also responsible for proper connection not only between his own divisions but also with divisions of adjacent corps. Division commanders are responsible for the detailed organization of each position included in their sectors, the connection between the various positions and the establishment of sufficient communicating facilities in their sectors.

Now the firing line does not necessarily mean a line of infantrymen in a forward trench all prepared to fire in the well known direction of *the front and flanks,* but it means a line of forward combat groups so disposed as to cover and protect each other mutually. They will not necessarily be on a straight line but the line on which they are to be arranged will be more or less sinuous in form. Each platoon will have organized one or more combat groups, so disposed as to protect adjacent groups, and also to cover the ground not covered by machine gun nests. The companies in the rear of the support line which the rear platoons of the front line companies form will similarly organize combat groups. Thus in Diagram 17 there will be seen a couple of companies arranged as in a defensive position on the front line. Of course the combat groups of the rear platoons would not necessarily enter the action until those of the ad-advanced platoons had been overrun, but should be able to bring flanking fire to bear to protect the advanced combat groups. The two companies shown in the diagram, together

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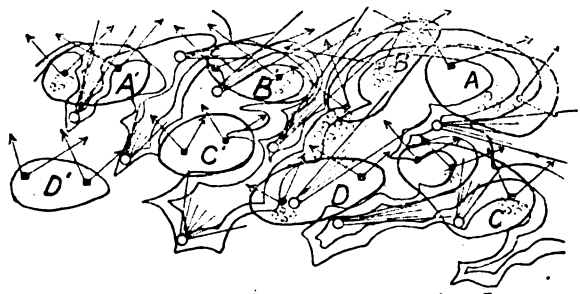
with the two companies of the battalion reserve, form the center of resistance.

When time permits the positions taken up by the different fractions of the command will be consolidated and made into an elaborate network of trench systems such as obtained on the western front during the World War, but whether entrenching is to take place or not, the organization of the position as outlined above is the same.



o = MACHINE GUNS A B A'B' = FORWARD PLATOONS
▪ = COMBAT GROUP C D C'D' = SUPPORT PLATOONS

DIAGRAM 17 (Chapter VI A)

Another point which must be remembered is that the features discussed in the foregoing are more extended and comprehensive by far than that needed for a small command. In a small command there would be but one battle position, and even this might be very restricted in scope. An outpost zone in advance would be a necessity, but beyond that there would probably be no switch, no intermediate, or second battle position.

Before leaving the subject of the position it will be necessary to discuss the physical requirements of a good defensive position and the reasons for the conclusions.

In former times, the requirements of a defensive position were: good locations for the flanks—points for them to rest upon where they would be unassailable; a clear field of fire to the front and flanks—ground gently sloping to the front, from the front line so as to afford this; rising ground slightly in the rear so as to afford a second tier of infantry fire; good lateral communications, likewise good communications to the rear and observation to the front. In general,

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it is desired that the ground in the rear of the position after a slight rise should fall to the rear somewhat more sharply than the glacis-like slope called for in the front of the position—the idea being in this that a sharper slope in the rear of a position afforded excellent opportunity to bring the supports and reserves nearer the front line without at the same time placing them in jeopardy of receiving fire directed on the front line. There was also a further reason for this; it was calculated to afford better cover for the communications, both front, rear, and lateral, and also to give the artillery arm the opportunity to come into action from covered positions.

A good many of the requirements in the foregoing are no longer of much weight in the selection of the present day defensive position. Our ideas are, to a considerable extent, influenced by the conditions existing on the long defensive line in Europe which extended from the Swiss frontier to the sea.

The larger the force and the greater in extent the defensive line is, the less will the commander devote his attention to minor details of particular parts of the line, and strategical considerations will govern the general location. Lengths of river lines, mountain ranges, etc., will govern for greatly extended lines and while the general contour of the same may be such as to render it harder for particular commands to occupy and hold certain sectors of the line, yet such must be the case. It is the average of the entire line that counts.

To continue, in order to visualize the ideal defensive position, one should ask himself the question, is the defense to be active or passive? In other words, is the defense to be one from which I intend to strike a telling blow at the enemy or is it one in which I am content to remain as long as the enemy does not molest me?

In either case, the first point to be covered is the proper location of the flanks. Flanks of any position are vulnerable because the defense is looking for the enemy to come from one direction and he actually comes from another. The thing about this which disconcerts the defense is not that a squad can fire down the entire line, enfilading it and

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killing four or five men with each shot, but the same old principle that we took up in the beginning: *Troops fight in a line and move in a column.* Now when an enemy appears on the flanks of a defensive line, the defense is practically in the same situation as though it were a column. It takes a great effort to swing troops around so as to meet the flank attack, and consequently the reason why commanders are always nervous in regard to their flanks is because they fear that an attack against the same will result in the flank being crumpled up and driven in before they have had a chance to make such dispositions as will meet the attack. Consequently, we may say that for any defensive position, a location for the flanks such that the commander need not worry about them, is ideal for defense. It makes no difference, whatever, what the size of the command may be. As before said, the flanks in the World War rested on the right on the neutral frontier of Switzerland, where it was supposedly safe, although probably only so on account of the Swiss army. On the left, the flank rested on the sea. Ideal or as near ideal as may be expected. But the World War was an exception, and history records no former case of armaments so tremendous as to permit of such an extension of a defensive line. The probabilities point to future wars being fought with more restricted fronts so that a commander who decides to take up the defensive or who has the defensive thrust upon him will have to make a study of how to protect properly his flanks by having them rest on unfordable rivers, fortresses, lakes or country so difficult of maneuvering that an enemy would scarcely attempt attacking them and consequently security would be felt in that regard. Such a country would be a mountain range devoid of conveniently located passes, a stretch of swamp land or a desert.

The clear field of fire to the front and flanks exacted in our former requirements of a defensive position has become considerably modified. It has been found by experience that a clear field of fire to the front to the visual range of the infantry rifle, say 1200 yards, which was what we formerly considered as not unreasonable, now brings upon us a necessary evil in the shape of hostile observation. In other words, while we can see to fire, on the other hand,

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the enemy can likewise see to fire and also to observe. Consequently it has been found better to give up our extended rifle range to the front and flanks. What we may lose in this is compensated for in a large degree by the fact that with the machine gun and the automatic, we can cover the front with strips of fire so intense that the troops who do get across will be negligible and dead spaces may be covered by riflemen and light mortars.

So we do not look for an extended field of fire at the present time but for a line along which our mutually supporting combat groups may have flanking fire. Some authorities are so extreme as to say that the field of fire need be no more than 100 yards, but this is too radical to be considered as a model. Three hundred to five hundred yards would be more like a correct solution.

To a considerable extent this condition has been brought about by the influence of the artillery. In the recent war artillery armaments were greater than they ever have been before and some persons have even gone so far as to say that superiority of fire was procured by artillery fire alone. This is not correct. It is procured by all arms; the artillery, the machine gun, the automatic, and the musket all play their parts, but the fact remains that artillery fire can be made so heavy that the field of fire for the smaller calibers has been lessened. What we look for, however, is a long range for all arms in the direction of the flanks, and for the smaller calibers what we particularly desire is a long range in a flanking direction, to cover neighboring combat groups.

The front line of the battle position nearest the enemy and in fact, the front lines of any of the battle positions must have a field of fire for machine guns, automatics and riflemen which will permit them to use their weapons within the foregoing limits, but always with the distinct understanding that each group of the front line regards itself as the protector of the group on the right and the left. In other words, it must be able to cross fire in front of the positions adjacent. These considerations form a firm basis for the defense. In addition to the foregoing, of course, is the artillery fire which it is also contemplated to place in front of our front line.

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So far as the abrupt slope to the rear is concerned—there are cases where this would be an advantage. One of these is where the line of resistance lies either on or in front of the crest. In this case, as a matter of course, a steep reverse slope would afford such protection as would permit the supports and reserves to be advanced to locations very close to the front line. There are objections to this. It takes a very steep slope to afford some defilade against artillery fire and if some considerable artillery action on the part of the enemy is to be expected, we will sacrifice a large number of men by having supports and reserves jammed up against the front line, even though they may be safe from rifle and machine gun fire. Again the idea is contrary to our present ideas in regard to distributing troops in depth. We must extend our troops to the rear for the purpose of spreading them over quite an area, thereby causing the artillery of the enemy to expend thousands of rounds to cover a certain area and this leads on his part to an exceptional waste of ammunition. We may say that a steep reverse slope is only desirable when the enemy has great preponderance of artillery. In any event we find it necessary to have observation towards the enemy's rear.

What we desire in the general case is a distribution of the troops in the rear so arranged that the enemy will literally wear himself out in the continued attack of one strong point after another until he is stopped or until he is expelled from the position by the counter-attack. It is seen that we may expect and count on some penetration on the part of the enemy in a determined attack and accordingly the steep reverse slope has not the great advantage that it did have formerly, but it has the advantage that it conceals communications in the rear and also may permit defilade for the artillery.

In general, the important things to be considered in the selection of a defensive position other than security of flanks are the communications and observation. In a large command, communications to the rear are of vital importance for bringing up supplies and the tremendous amounts of ammunition necessary. Lateral communications are also necessary to permit proper communication between different

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elements of the same line and also for the shifting of troops from one part of the defense to meet an attack which develops at another. Communications, in a lateral sense, are practically indispensable to provide for the movement of artillery from point to point and also for the continued supply of ammunition used up by that arm.

Observation is an essential for both infantry, machine guns and artillery. None can do without it. The restricted field of fire demanded of infantry under present conditions is compensated by the increased degree of observation required for the proper functioning of the artillery and machine guns. These must have observation in order to function properly. While map firing was indulged in during the last war to an unheard of degree, this was permitted or rather one may say the custom grew, as a natural outgrowth of the excellent maps of the country in which the war was fought. We must ever keep in mind the idea that the next war in which we take part may not be fought in a country which has practically every possible landmark located trigometrically on its maps. While observation may be carried on in the air to a great extent, this will not entirely suffice—the important thing is terrestrial observation which is a feature that can never be dispensed with.

In a large force, as an army, interior units are not distributed with any thought of their flanks. Their business is an out and out defense directed against a forward thrust of the enemy. As we consider smaller and smaller independent commands the flanks become more and more vulnerable and more and more care has to be exercised in their placing. When considering a certain unit in the line of a large or small command, it will be the lie of the ground in the particular locality that will determine its position. Dense flanking fire is advisable and desirable in all cases, so certain elements will have to be retracted more or less so as to afford this. The value of the flanking fire increases with the intervals between elements of the position.

The increase in the rapidity and volume of infantry fire and the ability of the supporting light artillery and machine guns to place accurately a fire barrier just in front of a defensive line has decreased the importance of the extensive field of infantry fire formerly exacted and greatly en-

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hanced the value of artillery and machine gun observation and communication. The terrain needed for artillery terrestrial observation determines more than any other factor the general line of each position to be held by the infantry. The infantry position should insure primarily the artillery terrestrial observation. In addition to the necessity for constant communication between artillery observation stations and batteries, the position selected should insure the timely supply of ammunition of all calibers, the rapid maneuver of troops such as reinforcing and counter-attacking detachments, and the supply of the necessary food, water and trench material. The ability of the light artillery to cover the front of a defensive line is materially influenced by the slope of the ground which, therefore, affects the exact location of the various defensive lines of a position.

The organization of each position includes five distinct but co-ordinated elements, i. e., the terrestrial observation. the infantry positions, the artillery positions, the system of communication and the system of supply.

The terrestrial observation includes that executed by the artillery, infantry and the intelligence personnel. While good defensive organization may be improvised by artificial means, terrestrial observation is solely dependent on the conformation of the natural terrain. It is, therefore, of primary consideration in selecting positions as they should not only supply but cover the necessary observation system.

The artillery should be provided with an extended view in rear of the hostile first position, as well as along that position in front of our own infantry's first position and throughout the defensive zone. All of these conditions can seldom be fulfilled in any zone or sector from one or two localities. It is generally necessary to establish separate observation posts for each class, i. e.:

The hostile first position and its rear elements.
Front of our own infantry, first battle position.
Throughout our own defensive zone.

While one locality may often be able to perform all of these functions, this is the exception, especially in reference to the army defensive zone. The following are generally required:

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Army posts to cover the hostile rear elements, such as roads, railroads, supply depots, etc., and the main defensive features of our own positions.

Corps posts for counter-battery and counter-preparation work to cover the hostile approaches (roads, railroads, etc.), and main trench systems, and the vital points of our own first position and the terrain in rear thereof.

Divisional posts covering the hostile first battle position, the terrain between the two hostile lines, " no man's land," and that between our own positions included in the division sector.

Each divisional observation system should overlap with that of adjacent divisions in order to insure the mutual support and the concentration of artillery fire planned by the employment of the normal and possible artillery zones of fire. The flash and sound ranging observation is included in this system. These artillery observation systems should be based on army general and corps detailed plans, which should insure a system which joins each phase into a coordinate whole.

The infantry observation system includes that necessary for its own protection (security) for ascertaining the changes in the hostile defense organization in its front; and for the proper direction of counter-attack units (supports and reserves).

The infantry's security is insured by the recognized system of outposts combined with constant patrolling to insure contact with the enemy, adjacent units, and examination of our own and enemy obstacles. Changes in hostile dispositions, including identifications, are determined by incursions into the hostile lines (patrols and raids). Provisions for suitable action by supports and reserves are provided for by communication with advance detachments and stations from which possible hostile approach lines may be constantly viewed. The employment of machine guns echeloned to the rear with the object of covering the flanks of advance strong points, requires special observation for these units, which may be advantageously located in the front infantry lines. This is especially so in connection with the machine guns employed for indirect fire against hostile rear works. All of these infantry observation ele-

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ments should be co-ordinated into one system for each divisional sector.

The intelligence personnel deals entirely with the hostile dispositions, etc. It covers the location and organization of hostile defense systems and garrisons, artillery emplacements, aerial ground parks, roads, railroads, movements, etc. While considerable data is gathered by aerial reconnaissance and photography, this information is checked and supplemented by terrestrial observation. The latter is carried on by special officers and soldiers who observe in selected stations along the front or may utilize those of the infantry and artillery. Each division and corps has its own intelligence observation system, which should be planned by the corps intelligence officer. The work of these men in no way relieves the infantry and artillery of their observation responsibilities.

The *defensive system* in a stabilized situation may be said to consist of an outpost system, a line of fire trenches, a line of cover trenches and a line of support trenches. In most cases it is necessary and desirable to establish an additional line for the cover of local reserves. Those lines are based on the following principles:

There should be a system of timely warning of an attack (observation line); a line of trenches (fire trenches) in which the passive defense is carried on but which, except for guards and observers, is only occupied to resist an attack; a line of bomb proof shelters (cover trenches) which protect the garrison of the fire trench during bombardment, etc.; and a line of shelters for the protection of and to serve as a base of departure for the local counter-attack units.

The *line of fire trenches* may be continuous along the whole front in stabilized warfare with the object of deceiving the enemy as to the exact part that is held, and to provide for rapid maneuver and communication. If this line consists of groups of trenches, hostile artillery may be readily concentrated on the vital points. The trace of this trench should afford flanking fire while avoiding salients. It therefore takes advantage of the configuration of the ground for this purpose and provides reentrant angles. At these latter points, automatic rifles or machine guns may be

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so placed as to bring flanking cross fire on adjacent points. The entire line of the trench is not uniformly held, the defense is carried on by combat groups (platoons or half platoons), located at points in the trench affording mutual support and flanking fire and which the enemy must carry to capture the position. These groups generally consist of one or more automatic rifles supported by riflemen who are also provided with grenades, and are commanded by an officer or experienced noncommissioned officer. In the "battle defense" the whole trench may be manned if necessary. This trench is primarily the fighting trench. There should be slight dugouts providing protection against shrapnel, shell fragments and inclement weather. Deep shelters (bomb proofs) in the fire trench are man traps, as the men cannot issue from them in time to meet the enemy.

The *line of cover trenches* should also be continuous for the reason given above. Deep bomb proofs (dugouts) are essential and should provide protection against heavy bombardment of shell and gas. These dugouts form the framework of the trace of this line, and should be located in close association with the fighting areas of the fire trenches. Their capacity should be sufficient for the detachments to man the fire trenches.

The line of support trenches should be continuous if practicable and should provide easy and rapid shifting of troops. They should be prepared as fire trenches and bases of departure for counter-attacks and provide bomb proof shelters for the garrison.

The *line of shelters for the local reserves* need not be continuous for the whole front; only the area included in the counter-attack plan of each unit. However, they should be sufficient for use as bases of departure for counter-attacks. Deep dugouts, proof against bombardment and gas, are essential. They should be fortified to form strong points of resistance.

If we assume a division operating in a situation under a mission such as requires it to take up a defensive position, on moving into such position in its simplest form it will be about as shown in Diagram 18, in which it is deployed on its battle position, and has extended to the front its outpost system, and to the flank its flank protection or covering detachments.

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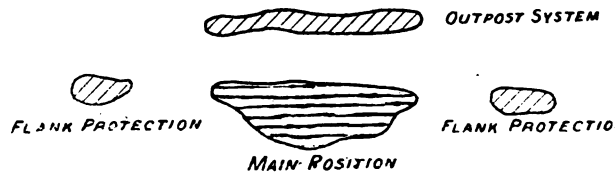

DIAGRAM 18 (Chapter VI A)

Now taking up the outpost system we find it to consist of a series of lines as shown in Diagram 19. In the advance we have the outpost line, or line of observation, this is followed by the main defense line or line of resistance of the outpost, then comes the line of outpost supports, and in rear of that the line of outpost reserves. In every case

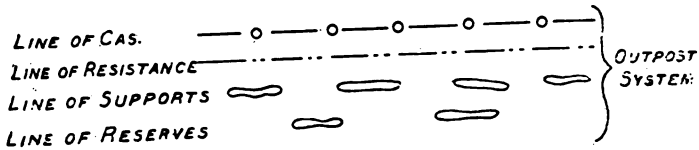

DIAGRAM 19 (Chapter VI A)

in the above, care has been taken to term the various lines the "outpost" line of supports, etc. This is so that there can be no possibility of any confusion of these lines with those of the main battle position farther to the rear.

The main defense position or battle position is also organized into a series of lines as shown in Diagram 20.

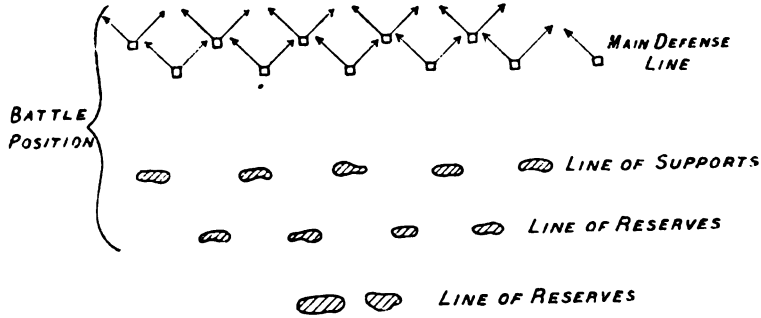

DIAGRAM 20 (Chapter VI A)

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Here again we have our lines of supports and reserves and our line of resistance or main defense line.

Now we may assume that a change has taken place in the situation. This we will consider has been brought about by the arrival of friendly divisions on our right and left and the organization of a corps. The lie of the ground is such that the divisions on our right and left have to hold, as main defensive positions, positions on the right and left of our outpost system. This necessitates our having to hold our outpost system as our main defense position, and as this requires us to bring forward our artillery, we have to place an intermediate position between what was our outpost system and our former battle position. This is shown in Diagram 21, and in front of our former outpost system we build up a new outpost system as indicated in the diagram and at the same time our former outpost system is remodeled for a first battle position.

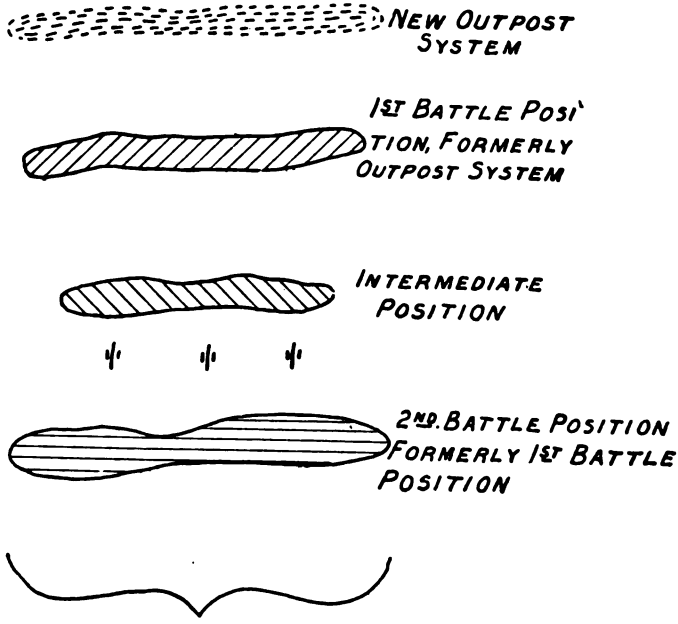

DIAGRAM 21 (Chapter VI A)

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Now under the assumption that more troops are added to our corps, such as divisions that are put in the corps reserve, we find that the corps commander organizes his area into a defensive zone. He may or may not decide to have a third battle position on which his corps reserves will be located. In this case we have decided that he will have a third battle position and our area now assumes the form as shown in Diagram 22. In this diagram the outpost system is outlined and also the sectors to the right and left of the divisional sectors we have been considering.

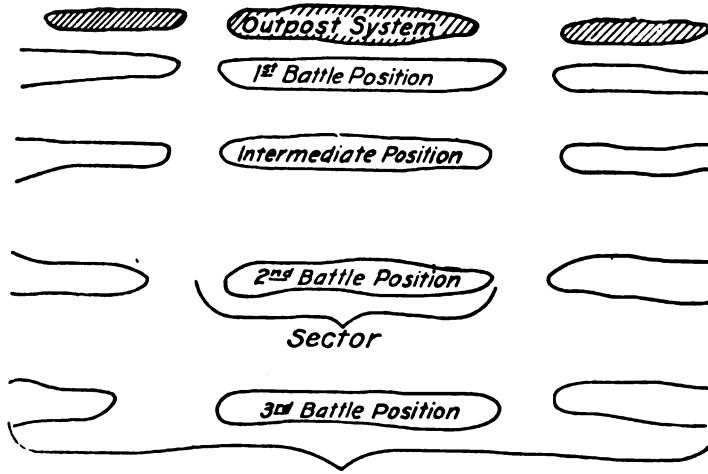

DIAGRAM 22 (Chapter VI A)

Carrying on the project farther, we consider that the corps has become a part of an army and that corps have come up and have prolonged our lines to the right and left and into the area army troops have arrived. Also in accord with the army defense plans, certain switch positions have been added so as to provide an unbroken line of defense in case of penetration and all in accord with the broad view of the army commander.

The result is shown in Diagram 23. Here we have shown the different divisional sectors in the corps we have been considering, and also the defensive zone assigned to the corps. The divisions and positions of the corps to the

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right and left are outlined in the diagram, the whole comprising the army defensive zone.

Now the foregoing must be taken as particular cases only and not as a general case which covers all conditions. In the above the switch position was not mentioned until we got into the province of the army. We may have a switch

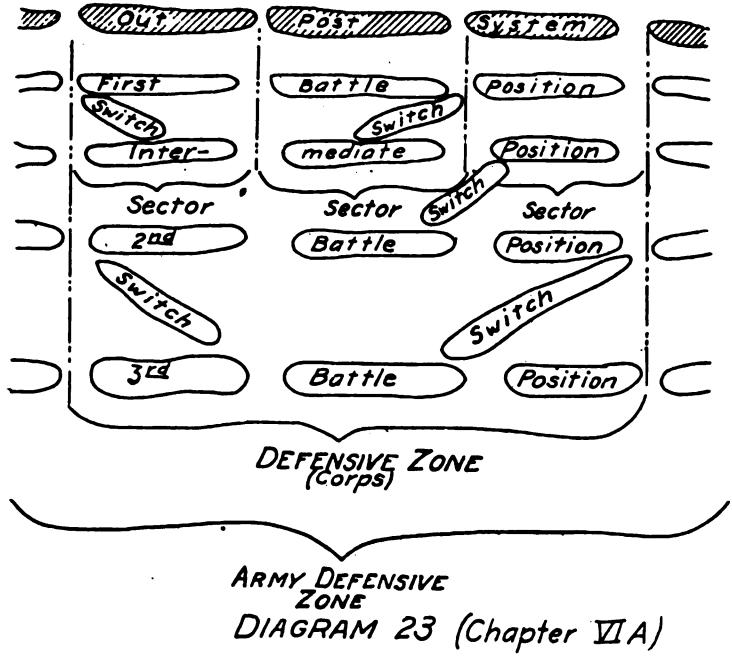

DIAGRAM 23 (Chapter VI A)

position in a corps defensive zone, when the corps is acting alone. Also we have the intermediate position between the first battle position and the second battle position. It might also exist between the second and third battle positions.

THE DIVISION IN DEFENSE

The foregoing covers the general principles and the terminology of the defense. Much that has been said can be applied to a defense in stabilized situations as well as to open warfare—some can be applied to one and not the other. A great deal of detail has been gone into so as to leave nothing out, but one must remember that in a small

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command there would not be the necessity for the large amount of discussion that has taken place as would be the case with a large command.

In order to make the subject clear the division will be taken as a basis and it will be considered until the different conditions that might arise:

1. Alone.
2. As a part of a corps.

Under each of these there will be considered the division deployed for defense, deployed in a hasty position, and in a defensive position that has been organized.

A Division Alone in Defense

A division may take the defensive in two ways. It may meet an enemy and, as a result of, or during the meeting engagement may take a defensive attitude. It may be given such a mission as will require it to move into a defensive position and there await the enemy. In the first case the circumstances will almost always be such that there will be more or less uncertainty in regard to the terrain. What is meant by this is that the ground will probably not have been as thoroughly investigated as would have been the case in other situations and there cannot be the well ordered taking up of a defensive position that would be the case were the knowledge of the ground more perfect. The taking up of a defensive position in this case is one forced on the division by the circumstances of the fight and to some considerable extent may be beyond the control of the division commander.

In the other case where the division is given a mission which causes it to assume the defensive this may occur in three ways. It may be ordered to perform some particular function which will place it in a situation where it will have to assume the defensive without the requisite time necessary to reconnoiter completely the terrain. The division will then await "deployed for defense." There are no intrenchments and no accurate knowledge as to the whereabouts of strong points, locations for machine gun nests, etc. The division simply for the purpose of occupying the position, develops, takes up the approach march, and deploys so as to cover the front.

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The outpost would be sent to the front so that we would have some covering detachments ahead of the position selected for the line of resistance. Now the action of the front line elements is different in this case from what it would be were the terrain more definitely known. The front line elements will have to be spread out more like a skirmish line than is usually the case, so as to have riflemen and automatics covering the front and no gaps in the line. Machine guns would have to be farther to the front than is usually the case in more stabilized situations, and the reasons for this are that the solution is one that has not given us time to select carefully the points in or at which the various combat groups are to form and support mutually one another.

As time goes on and we are not disturbed in our position we improve it. The skirmish line disappears and the men are gathered in to different points at which they organize combat groups and so locate each as to afford the flanking fire so necessary in a defensive position. At the same time the machine gun commanders have reconnoitered the ground and selected the positions for their guns and have so located them as to place the requisite barrages in front of our main battle position in case of an attack.

The artillery will also have had time to be better located and the entire position may be said to be one of hasty defense.

In regard to the flanks of a division acting alone, it almost needs no mention that the flanks will have to be protected by covering detachments. Situations can be conceived where such will not be necessary as in the case where a division rests one of its flanks on a river, a lake, or a marsh. In these cases there would be no covering detachment, but in the general case wherein there are no such convenient features as indicated above to cover the flanks for us, the covering will have to be done by detachments located sufficiently far from the exposed flank to permit them to give us warning of enemy activity in that direction and yet allow us the opportunity of changing our front or using our reserves to maintain our place.

Typical deployments in such situations as outlined above are shown in Diagram 24. In (a) the flanks are very

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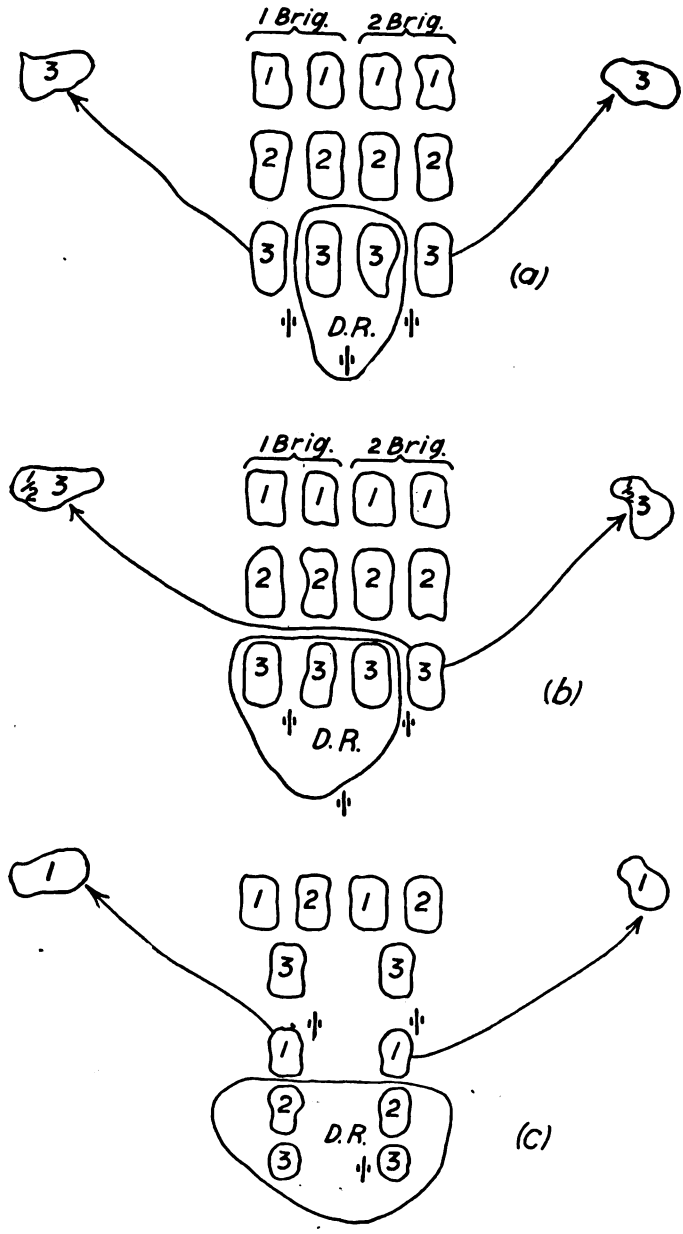

DIAGRAM 24 (Chapter VI A)

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weak and a battalion is sent to each as a covering force. In (b) the deployment is made under the assumption that the flanks are stronger and need but one-half a battalion each. One battalion is completely split for this purpose and the division commander holds three battalions as a reserve. In both these cases the brigade commander must get his brigade reserve from the second line battalions of his brigade, preferably by holding back either an entire battalion of the regiment which has the best location in the line—the one which is deemed the least assailable, or should all be equal, he could detach from the second line battalions one or more companies and hold them as brigade reserves. This forms a very powerful reserve which can be used in the defense seeking a decision for the main counter-attack. The manner in which the artillery is deployed in each of these forms of deployment is shown in the diagram and in these it will be noted that in each case, each brigade sector gets one regiment of light artillery for its support while the regiment of heavy artillery will be so arranged as to be able to bring fire to bear on any part of the front.

Now when yet more time is available for the defense a more elaborate system is worked out. In the division acting alone we can scarcely consider that it would occupy more than one battle position. This would be on favorable ground and covered in its front by the outpost system and would consist of the usual framework of trenches for the front line, communication trenches, and carefully selected positions would be organized for machine guns and artillery so that protective fire can cover the entire front. In this case the main position would be organized somewhat as shown in Diagrams 11 and 17, the positions shown therein being assumed as joined up by a system of trenches, the regimental reserves occupying positions farther to the rear; the brigade and divisional reserves occupy positions in readiness still farther back. As to whether obstacles are placed in front of the main position or not is a question that varies with the form of defense. In passive defense obstacles would be used. In defense seeking a decision they would be used, if at all, in such a way as not to interfere with the main counter-attack.

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The front to be held would depend on whether the defense is active or passive. If passive the front as before shown can be more extended because there is no intention of striking a counter-blow and troops that would ordinarily be held back for the counter-attack would be put into the line. Another point that determines the width of the front is the security of the flanks. If these are secure on naturally strong and unassailable points, then in the passive defense the front can be still further extended by the use of the troops that would otherwise be designated as reserves to cover the flanks. No set rule to cover all cases can be given but it may be said that in general in the passive defense a division should endeavor only in exceptional circumstances to hold a front of more than three and one-half or four miles, and this with both flanks secure.

The reserve with which we expect to strike a blow in the defense seeking a decision is held well to the rear for reasons before given. This is more or less indefinite and while it is again impossible to prescribe a set rule to cover all cases we may say that in the general case it should be held back in the rear of the front line a distance equal approximately to the distance between the flanks. This will generally permit it to come into action without being cramped for room in deploying.

In a step by step defense the question of a reserve arises. In this defense we do not intend to strike a blow. We have no main counter-attack in contemplation. What we are to do is to take up a position and when the enemy has started his attack we oppose him for a time and then withdraw to another position farther to the rear. In this form we can see that the division we are considering will need no heavy reserve but will need a sufficient number of troops held out of the fight to cover the withdrawal and to prepare the new position in the rear. These will not need to be so heavy as the reserve that would be held back in the case of a defense seeking a decision.

A Division as Part of a Corps in Defense

In considering a division as a part of a corps in defense, the main difference which distinguishes it from a division acting alone is the situation in reference to the flanks. A

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division acting alone has flanks; a division as a part of a corps—unless it happens to be a flank division—has no flanks, so we can generally consider in all cases under which this topic may be discussed that the division considered has at the most one exposed flank only and possibly not even that. It is thus seen that in this situation a division may hold a more extended frontage than would be the case were it alone.

As before, in an advance and hostile encounter when the higher command decides on the defensive it is the province of the corps commander to pick out the line on which he is to establish his main battle position, to assign divisions to sectors of this line and to delineate the boundaries by means of geographical features as far as possible. The division commander deploys his division within his designated sector by dividing it into brigade sectors and in front of the same extends his outpost system. In lieu of the formerly important subject of protecting his flanks he now has the important duty of maintaining communication with the division on his right and left. This is done by the detailing of a mixed contact detachment from both divisions to preserve communication between the two along the divisional boundaries. In other respects the situation is about the same as in the first situation discussed under the division acting alone.

As the position is held for a certain period of time, and things become more stabilized the situation develops into a hastily prepared position in which combat groups are organized and located so as to cover the front, and particular care must be given to the location of the groups on the divisional boundaries that they cover both contiguous groups to the right and left. In this situation the divisional reserve may be said to be held back for use in a local counter-attack, and the main counter-attack will be launched by the corps commander with his reserve divisions. The manner of deployment would be different in that a wider front could be covered and each regiment could be formed up as a rule with two battalions in the first line and one for support. Each support battalion would have to contribute one or more companies to the brigade and divisional reserves.

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In the well organized position or one which has been held for a long time, we have, so far as the division is concerned, the situation that existed in France on the western front from the time of the race for the sea without many interruptions until the last offensive which ended with the armistice of November 11th. In this phase of the defensive great refinement of detail exists on every side of the question. Lines which are to be held are assigned by the higher commanders and in many instances the initiative of the subordinate is suppressed.

Conduct of the Defense

Division acting alone. In this case we consider two situations:

(a) When the position is hastily taken up.
(b) In a stabilized situation.

In the first case the field orders of the division commander are not as explicit and do not go into every minute detail as would be expected in the second case. The order would prescribe the general location of the position—the line of resistance, the location of the outpost system, the assignment of troops to sectors and protection of flanks, general location of the artillery, the location of the reserves, the plan of communication, most of this being covered in the order, the form of which is shown later on. In accord with whether we are in active or passive defense we consider the roads and methods of withdrawal.

In a stabilized situation we can confidently say that in the case of the division acting alone, it will be the outgrowth of a period of waiting and such a position will not be gone into by a field order. The main difference between this and (a) is that the stabilized situation is generally the result of a period of passive defense. As before pointed out, in this scheme of defense we have only reserves for the local counter-attack and to protect our flanks. With great attention to detail each possible action of the enemy is foreseen and troops placed in the best situation to cover all events. Possible situations are tabulated and our countermoves in a like manner tabulated so that when the action comes the right remedy is put into operation at once.

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Division as a part of a corps. In this situation we again have the two cases: first, where the position is taken up in the open, as when a corps marching on a broad front meets the enemy; second, where the position taken up is the result of a long period of waiting.

In the first case, as was the case with the divisional commander in the division acting alone, there is no great refinement of detail in the field order ordering the position. The corps commander decides on the proper line for his first battle position and in his orders assigns divisions to sectors thereof. In this case some of the divisions may be able to attain their positions and stay therein some considerable length of time without any trouble coming from the enemy. Others will not be so fortunate and may have to get into their sectors under fire if they don't actually have to fight for their places. In general it may be said that when in a situation in open warfare wherein we consider a division as a part of a corps in the defense, the division will not occupy the wide front that would be permitted were it in a stabilized situation. This is so because in the hastily taken up position there is not the time necessary for the complete organization of the ground that exists in the stabilized situation. In other words, in open warfare we must have a more or less continuous line while in the stabilized situation gaps are permissible if these can be covered by fire from favorable localities on the right and left thereof. In the stabilized situations the line is made continuous by fire.

The division as a part of the corps in a stabilized situation occupies its sector as the result of a period of passive resistance, during which every topographical feature of the sector will have become known and all possibilities in the entire sector have been carefully considered. Here we have the carefully prepared plans of defense worked out by the corps headquarters and to which the divisional commanders must conform.

With a view of clarifying somewhat the defensive when taken up by a division acting as a part of a corps, the following description of the position taken up by the 43d French Division in the Hurlus Sector is given.

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The enemy's line was generally as shown at *A*, Diagram 25. Paralleling this comes the first position, or, as we would call it, the first battle position. It consisted of a couple of parallels shown at *B* and *C*. Then behind a distance of about 500 meters is a support parallel and still farther back another parallel of redoubts. At D is shown the intermediate position consisting of three parallels connected up by proper communication trenches and having a depth of about 1000 meters.

About 1 to 1½ kilometers in rear of the intermediate position is the second battle position and yet farther to the rear—a distance of about 5 to 6 kilometers—is the third battle position shown on the diagram at *E*.

The front held by this division is about 3½ miles and this was divided into subsectors, as shown on the diagram. The three subsectors were held by a regiment of infantry each. One battalion of each regiment was disposed in the first battle position. One battalion of each regiment was located in the intermediate position, and one battalion of each regiment at rest in the area between the second battle position and the third battle position.

According to the defense orders given by the higher command the intermediate position in this case was the one on which battle was to be given. This is the position which corresponds to the zone of resistance of our *Infantry Drill Regulations*, and each subsector organized that part of the intermediate position within its domain into two centers of resistance. While one battalion only held the intermediate position during normal times, arrangements were made whereby the battalion in the area in the rear of the second battle position should come to the front and occupy a center of resistance in the intermediate position, relieving the elements of the battalion already there, which in turn were gathered together into their own proper centers of resistance.

In this particular it will be observed that the first battle position has really degenerated into nothing more than an outpost system whose function is to hold up the attack until such time as the intermediate position is ready

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and troops arranged therein for the main defense. In this case also the second and third positions were traced out on the ground and certain shelters constructed, but there

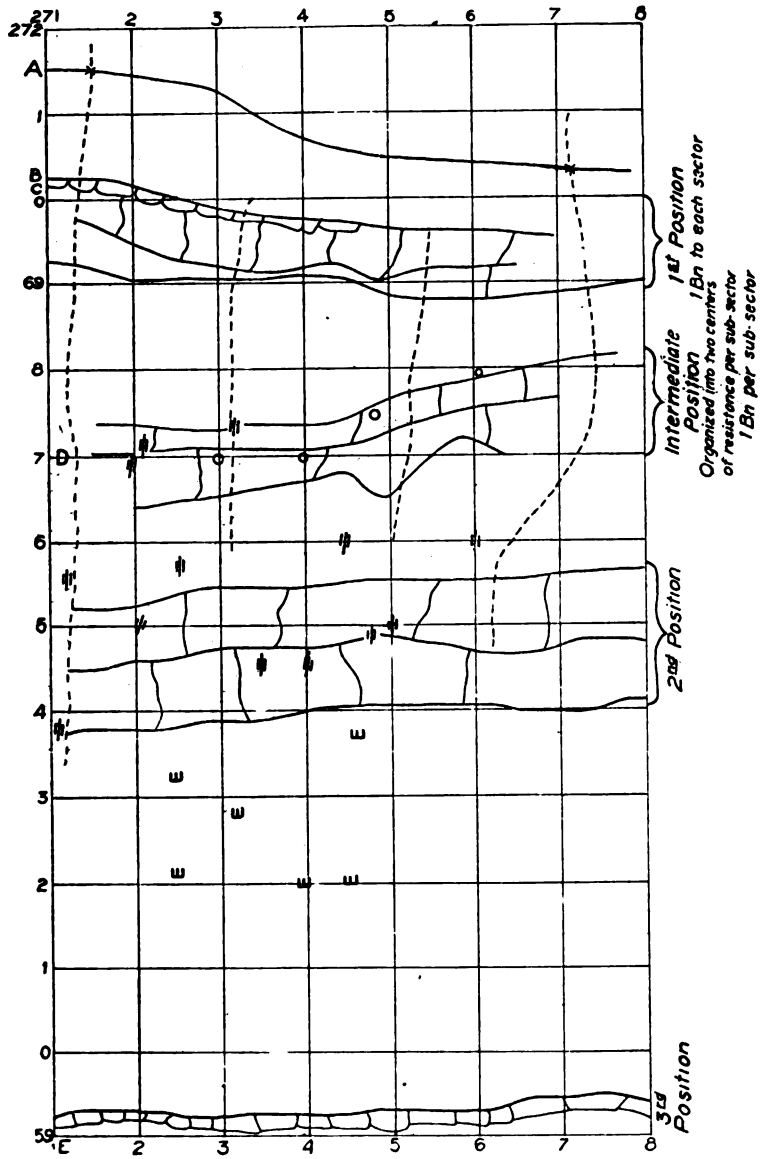

DIAGRAM 25 (Chapter VI A)

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yet remained a great deal of work to be done in them. In other words, in this case, while the second and third positions were traced and organized on paper, they were not so completely organized on the ground. The intermediate position was well organized for machine gun defense, whereas in the first position only machine guns of obsolete type were placed.

The light artillery was located in the second battle position and in the area between the intermediate and the second battle positions although two or three batteries were in the intermediate position itself. The heavy artillery was all placed in the rear of the second battle position. Four batteries of light artillery were assigned to each subsector. Instructions governing the use of this arm were to the effect that while it was to co-operate with the troops in the first battle position its main mission was to assure the active defense of the intermediate position. Instructions were also given that all daily bombardments, firing on fleeting targets, harassing fire, and firing on airplanes was to be done by advanced sections of different batteries which should under no circumstances occupy their actual combat emplacements.

Two cases of attack were considered. One in which the attack comes more or less as a surprise and there is no time for any order to be transmitted from the army commander in reference to the withdrawal of the battalions of the first battle position. In this case the battalions of the first and intermediate positions resist in place, cost what it may, the idea being to hold on to the intermediate position. In this case the artillery carries out its counter-preparation and previously planned barrage fire.

In the other case it is assumed that the attack has been foreseen a sufficient length of time in advance to permit the troops in the first position to be ordered to retire from the same. In this case they retire through the intermediate position and automatically take up a position in reserve in rear of the same. It is interesting to note that the first position battalions in retiring from the first position leave two combat groups per battalion on the redoubt parallel of the first battle position whose duty it is to disor-

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ganize the attack and to signal to their friends in rear the advance of the enemy. In certain sectors these were allowed to retire when about to be surrounded but in others they were to resist to the end and the movement of these detachments were not in any way to be considered by the artillery in its barrage work. The battalions of the first battle position were relieved every eight days by those of the intermediate position which in a like manner were relieved each eight days by the reserve battalion.

The barrage zones of the artillery were dependent in a measure in this sector on the two cases discussed above—whether the first positions had been evacuated or not by the advanced infantry battalions.

Field order. The entire work of the different elements of a division when in the defensive as a part of a corps and in a stabilized situation or in any situation would be contained in a field order. In this document would be contained the necessary information, orders, and instructions, which are arranged in the ordinary sequence of the well understood five-paragraph field order.

The tactical defensive as shown in the foregoing includes three rather distinct situations, as follows:

(a) Defense without any except local organization of the ground. In this case there is a deployment for defense and, in such time as may be available, hasty intrenchments only are dug.

(b) Defense in one position. Here the situation is such that only one position is taken up and the ground thereof organized as far as the time element permits. This one position, of course, *contains several lines.*

(c) Defense in several successive positions comprising a defensive zone. Here the time element is such that several distinct but co-related positions are organized. Each position is organized with its own lines and each position plays a definite role in the whole defense scheme.

It is evident that the contents of field orders for defense will vary, depending on the class of situation considered, size of the command, and the time element. The foregoing is also true in connection with annexes such as artillery plan, machine gun plan, etc. The time element and the class of defensive situation considered will determine the contents and amount of detail to be placed in the field order or reserved for the annexes.

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Distinction should be made between the *field orders* and *standing orders* for the defense of each sector. The *field order* should announce the organization and the plan of defense, while the *standing orders* relate to specific regulations to meet special conditions other than tactical in each sector, such as routine gas defense, reliefs, periodical tests of communications, etc. It is evident that the latter are not included in the field orders. They are *standing orders* of a sector and apply only in a stabilized situation.

With the foregoing in mind, the following form has been prepared as a guide for all classes of defensive situations. *However, one should be guided by the peculiarities of each situation in determining the contents of the field order.*

ORDERS FOR DEFENSE

(Title)
(Place)
(Date and hour)

FIELD ORDERS
No —

(Map Reference)

1. (a) Information of the enemy.[1]
   (b) Information of our supporting troops.
2. (a) General plan of commander indicating the general line to be defended.
   (b) Position to be organized—first, second, switch, intermediate, etc., giving in general terms main line of resistance of each position.
   (c) Boundaries of defense area occupied by command and designation of primary subdivisions therof.[2]
3. (a) *Infantry*, assignments to primary subdivisions (subsectors, etc.), missions, functions, etc., Cover special tactical organization and preparation requirements relating to each subdivision of the defense. Use a subparagraph, 3 (a) (1), 3 (a) (2), etc., for each organization holding one of the subdivisions given in 2-c.
   (b) *Machine guns*, assignments, general employment and special missions.[3]
   (c) *Artillery*, assignment of units to support primary subdivisions, subsectors, etc., percentage to be employed in defense of each position, counter-battery units.[4]
   (d) *Tanks*, assignment to reserve or to primary subdivisions (subsectors, etc.) and missions.[5]
   (e) *Reserves*, designation of troops, positions, alertness.
   (f) *Cavalry*, cover both flanks and main force held in suitable position to act at crises of engagement. Reconnaissance.
   (g) *Air service*, contact work, assignment to artillery work, reconnaissance, and combat missions.[6]
   (h) *Engineers*, special work in connection with the defensive organization and supply, such as obstacles, clearings, special strong points, bridges, roads, etc.[7]

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(i) *Signal troops*, any movements.
(j) Instructions for any troops not otherwise covered.
(x) Instructions pertaining to whole command.
Conduct of defense:
(a) Mission of each position when there is more than one.
(b) Strength, occupation and manner of defending each position.
(c) Action of each organization in case of surprise attack and in case of foreseen attack.
(d) Counter-attack, when, by what units, direction and extent.
(e) Barrage lines, protective, counter-preparation, and counter-attack barrages.
Defense against tanks; manner; by what units.[8]
Instructions for gas defense.
Special instructions for organization of ground, priority of work, obstacles, roads, etc.[7]

4. See administrative orders, station for slighly wounded.
5. (a) Plan of signal communications; any changes therein.
(b) Axes of signal communications.
(c) Command posts.

Distribution:

[1]When time permits, enemy information is supplemented as to details by intelligence summaries and plans of intelligence research.
[2]When time permits (b) and (c) are supplemented as to details by a plan of organization of ground.
[3]When time is available above is supplemented as to details by a machine gun annex.
[4]Details to be covered in artillery annex.
[5]When time permits details are covered in a tank annex.
[6]When time permits supplemented as to details by an air service annex.
[7]When time permits may be supplemented as to details by a plan of organization of ground.
[8]When time permits supplemented as to details by an anti-tank defense annex.

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(B) A DEFENSIVE POSITION

COLONEL L. R. HOLBROOK, Field Artillery, General Situation, Division Field and Administrative Orders, Artillery Brigade Orders.
CAPTAIN O. S. ALBRIGHT, Infantry, Signal Communications.
CAPTAIN W. C. SHORT, Infantry, Organization of Brigade Sector.
LIEUTENANT COLONEL M. A. W. SHOCKLEY, Medical Corps, Sanitary Arrangements.

EDITOR'S NOTE:—These four officers have colaborated in the discussion of a problem, *A Defensive Position.*

General Situation. Division Field and Administrative Orders. Artillery Brigade Orders

COLONEL L. R. HOLBROOK,
Field Artillery

Maps: General Map, Gettysburg-Antietam, 1″=10 miles; 1:21120, New Oxford, Bonneauville, Gettysburg, Hunterstown, Arendtsville and Knoxlyn sheets.

General Situation:

The Little Conewago Creek and a line extending north separates the western Red territory from the eastern Blue. Red territory about Gettysburg and eastward to the little Conewago is occupied by Blue sympathizers.

It has been learned that a Red corps undergoing training at Carlisle, Shippensburg, Chambersburg, and Greencastle, has been ordered to concentrate in the vicinity of Gettysburg with a view to invasion of the Blue territory in the direction of Lancaster.

A Blue corps with headquarters at York has been organized with its 1st Division and one regiment of cavalry in the vicinity of Hanover, the 2d Division at Spring Grove and all other troops in the vicinity of York, and has been ordered to invade the Red territory, prevent concentration of the Red corps and attack Red columns in march or wherever found.

Special Situation:

The corps commander has moved his headquarters to Hanover prior to the invasion. The 1st Division has been reenforced by one regiment of cavalry, and on the night of 14-15 September, camped along the Little Conewago in the vicinity of Brushtown, covered by its cavalry only, with its rear elements in and about Hanover.

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On 15 September, the Blue troops are in march. The 1st Division is in two columns with orders to halt for the night in the area between Gettysburg and Bonneauville, both inclusive. The heads of its main bodies are crossing the Little Conewago at 9:00 AM in the vicinity of Brushtown and Conewago Chapel. The 2d Division is ordered to follow the 1st Division and camp for the night of 15-16 September in the area occupied on the previous night by the 1st Division.

At 9:30 AM Major General A, commanding the 1st Division (with his command post at Hanover), receives the following verbal message from the corps commander:

> "Airplanes report Red forces of all arms in march through South Mountain all the way from Shippensburg and Chambersburg to within two or three miles of Arendtsville and Cashtown, respectively, with cavalry patrols in and about the latter towns at about 8:45 this morning. No troops are observed moving from Carlisle or Greencastle, although both roads have been scouted by the air service.
>
> "Secure the heights to the east of Gettysburg and cover the development of the corps preparatory to an attack. The 2d Division will extend your left south to Round Top, inclusive. Hold this ground until relieved by them. The 3d and 4th Divisions are to leave York on the morning of 16 September, each in two columns by way of the New Oxford and Hanover roads, respectively."

Disposition of the 1st Division

In march the elements of the 1st Division are disposed as follows:

Left Column	*Right Column*
(Via Brushtown—Bonneauville.)	(Via Conewago Chapel—606—594—572—617—602.)
Advance Guard	*Advance Guard*
3d Infantry (less 1 battalion).	1st Infantry (less 1 battalion).
Company B, 1st Engineers.	Company A, 1st Engineers.
2d Light Artillery (less 1 battalion).	1st Light Artillery (less 1 battalion).
4th Ambulance Company.	
Main Body	*Main Body*
1st Field Signal Battalion.	Brigadier General C commanding:
Division Headquarters.	1st Brigade Headquarters.
2d Brigade Headquarters.	1 battalion, 1st Infantry.
1 battalion, 3d Infantry.	2d Machine Gun Battalion.
3d Machine Gun Battalion.	1 battalion, 1st Light Artillery.
1 battalion, 2d Light Artillery.	2d Infantry.
4th Infantry.	Field trains of column.
1st Engineers (less 2 companies).	Ammunition train.

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4th Field Hospital Company.
1st Engineer Train.
3d Heavy Artillery.
1st Machine Gun Battalion.
Field trains of column.
1st Ambulance Company.
Division Headquarters, second echelon.
Sanitary train (less 1st and 4th Ambulance Companies and 4th Field Hospital Company.)
Supply train.

The division is covered by the regiment of cavalry acting independently. The 1st Observation Squadron is operating from fields at Hanover. Railhead for 15 September, New Oxford, guarded by a squadron of corps cavalry.

NOTE:—On account of the change in the situation, General A expects that the 2d Division will be directed by way of Littlestown and camp its leading elements there on the night of 15-16 September, 1919.

ESTIMATE OF THE SITUATION

Mission:—To secure the heights to the east of Gettysburg, extending the left to cover Round Top until the 2d Division takes over this portion of the position, and to cover the development of the corps for attack.

Information in Regard to the Enemy:—The two columns of troops of all arms reported approaching Cashtown and Arendtsville can from their length, and from previous information, be assumed to be the two divisions known to have been in training at Chambersburg and Shippensburg and it may well be assumed that they are marching on Gettysburg or vicinity, in preparation for the proposed invasion of the Blue territory, and that the remaining two divisions of the corps have not apparently left their training areas at Carlisle and Greencastle, which two points are at about the same distance as York from Gettysburg. The two Red divisions approaching Gettysburg are more distant from that point by a few miles than General A and are forced to march in single column through the mountains.

The worst General A can anticipate is an attempted attack on him in force on the 17th, as it will take the Reds fully two days to reach the vicinity of Gettysburg and deploy for attack.

Information as to Our Supporting Troops:—The 1st Division, although requiring about 18 miles of road space for each column, has but ten to twelve miles to march and the rear elements should be enroute from Hanover by about

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1:00 PM and the entire command without undue exertion, in position by night. At any rate the 1st Division will have practically one full day for organization of its position before it can be seriously attacked by the enemy. On the night of 15-16 September, the 2d Division will camp in the vicinity of the Conewago with leading elements perhaps at Littlestown, and by the morning of the 17th, it can also be in position, though less completely organized for defense.

The 3d Division is about one day's march further to the rear than the 2d, and the 4th Division parallels the 3d in march.

General A's line of action is plainly to continue the advance and carry out his mission and, pending the arrival of the 2d Division, to secure possession of the high ground to the left of his defensive position as far as Round Top. General A has no alternative and there appears no reason why the mission should not be carried out as ordered.

By an inspection of the map there are seen at once two positions available for General A and suitable for defense, east of Gettysburg, each possessing certain advantages over the other. It is clearly possible to have considered the organization of a position west of Gettysburg, but this is not within the discretion of General A. The disadvantages of such action would have been considered by the corps commander.

The Two Possible Positions:—Unquestionably the ridge of hills 627—612 (at Rocky Grove S. H.)—Wolf Hill—592—Round Top must be secured to cover the development of the corps prior to attack.

So far as the 1st Division is concerned, the position itself can be strongly held by entrenched lines along the ridge 627—606—567—496 with an outpost system covering the ridge 579 (on railroad)—hills 612—618—569—Culps Hill, extended on both flanks. The organization of this position would entail cutting of roads through an extensive woods and if practical the construction of obstacles along its near edge in front of the firing position. The entrenched lines would offer very limited fields of fire for small arms and machine guns. The firing line itself would in general be well concealed, and very effective for defense, possessing many elements of surprise for an attacking force. An at-

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tacking force would, however, after taking the outpost line, gain much cover in the extensive woods; but would then be retarded in working forward to an assaulting position by such difficulties as would be encountered by natural and artificial obstacles, and by organization of open lanes and exposed areas for machine gun defense. Considering this position, the corresponding outpost line of resistance is too distant for effective cover by small arms fire from the main line of resistance in rear, and attacking troops would get to cover quickly. If the main line of resistance is carried, it will seriously expose troops retiring to cover east of White Run. Moreover, the broad White Run valley offers a great advantage of cover for troops and for movement of trains and would be rendered much more secure by pushing the line of defense farther to the front. Furthermore, considering this position the continuity is broken so long as Culp's Hill must be secured and held as part of it, and this appears quite necessary.

The forward position, 579 (on railroad)—hills 612—618 569—Stevens Hill with an outpost system some 1,500 to 2,000 yards more advanced, offers the advantages of good fields of fire, a refused right flank, quick preparation for defense, covered approaches, good observation, good artillery positions easily accessible and a general alignment of the 1st and 2d Divisions, though lacking in good lateral roads immediately in rear. This line exceeds the length considered appropriate for passive defense in the general case, but it is fully justified by the necessity of securing flank protection, and knowing that support will certainly arrive before the division can become seriously engaged.

DECISION

General A decides to occupy the latter position from beyond 579 to Stevens Hill (both inclusive), securing the 2d Division position by his cavalry and the division machine gun battalion.

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THE DIVISION FIELD ORDERS

1st Division,
HANOVER,
15 September 19, 10:00 AM.

FIELD ORDERS
No 3

Maps: General Map 1"=10 miles; 1:21120, New Oxford, Bonneauville, Gettysburg, Arendtsville, Knoxlyn, Hunterstown Sheet.

1. (a) Red columns of all arms are reported advancing through SOUTH MOUNTAIN from CHAMBERSBURG and SHIPPENSBURG, heads of columns approaching CASHTOWN and ARENDTSVILLE. No other Red columns yet seen.
   (b) Our 2d Division follows immediately in our rear and will extend our left to include ROUND TOP. The remainder of the corps advances from YORK tomorrow morning.
2. (a) This division will take up a defensive position just east of GETTYSBURG from woods near 579 on W. M. R. R. to 552 at STEVEN'S HILL (both inclusive) covering the development of the corps in preparation for an attack.
   (b) Left boundary right brigade sector, BRICK KILN—hill 606—RJ 550—SQUARE CORNER, exclusive. Right boundary left brigade sector same line, inclusive.
3. (a) 1. The 1st Brigade (less 1 battalion for division reserve) will organize the defensive position from woods near 579 on W. M. R. R. (inclusive) to a point 600 yds northeast of hill 566, with main line of resistance on that line and the line of resistance of the outposts 1500 to 2000 yards in advance.
   2. The 2d Brigade (less 1 battalion for division reserve) will organize the position from the 1st Brigade left (600 yards to northeast of 566) to 552 STEVEN'S HILL (inclusive) providing its own outposts and connecting its outpost lines of resistance and observation with those of the 1st Brigade.
   (b) The 1st Machine Gun Battalion is attached to the 1st Cavalry.
   (c) The 1st Field Artillery Brigade will support each infantry brigade with one regiment of light artillery and retain the regiment of heavy artillery in general support. Special attention will be given to covering our right flank, to the position to be held for occupation by the 2d Division (See Artillery Annex) and to long range fire upon roads radiating forward from GETTYSBURG.
   (d) The division reserve (1 battalion from each brigade) will be posted on WHITE RUN in the vicinity of road junction 425 on BALTIMORE TURNPIKE.
   (e) 1. The independent cavalry (1st Machine Gun Battalion attached) will seize GETTYSBURG and hold the crossings on MARSH CREEK from GREENMOUNT to SEVEN STARS and the ridge from SEVEN STARS to TEXAS. If forced to retire, the regiment (less 2 troops) will withdraw to the line ROUND TOP—STEVEN'S HILL covering our left flank and the GETTYSBURG—LITTLESTOWN R. R. and holding the 2d Division position until relieved.
   2. The division reserve and artillery will be placed for emergency support of the 2d Division position.
   3. One squadron (less 2 troops) will cover the right flank of the position and guard the Western Maryland Railroad.

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(f) The 1st Observation Squadron will keep the approaching Red columns under observation and scout all roads towards CARLISLE and GREENCASTLE.

(g) The 1st Engineers near crossroads 516 (355.5—747.0). One battalion to report to each infantry brigade commander for assistance in organization of position and opening roads through the woods.

(x) 1. Infantry units will camp tonight west of WHITE RUN in rear of the positions being prepared by them.

2. Detailed reconnaissance will be made at once by brigade commanders and defensive works pushed by all concerned. Brigade plans for organization of the ground will be submitted not later than 4:00 PM. The detailed plan of defense will issue later from these headquarters.

3. In case of attack, the line of resistance of the main position will be held. Outposts will not be withdrawn without orders from these headquarters.

4. See Administrative Orders.
Station for Slightly Wounded: crossroads 601 northeast of BONNEAUVILLE.

5. (a) Axis of Signal Communication for division and 2d Brigade: HANOVER ROADS for 1st Brigade, ROCKY GROVE S. H.—crossroads 586—527—531—488.

(b) Command Posts:
1st Division command post will close at HANOVER at 3:00 PM and open at same hour at BONNEAUVILLE. 2d echelon, NEW OXFORD.
1st Brigade, ROCKY GROVE S. H.
2d Brigade, at farm house 500 yards SE of 550 (northeast of WOLF HILL).
1st Field Artillery Brigade, at BONNEAUVILLE.

A
Major General.

Distribution:

CG	1st Obsn Sq
Div Staff	1st F Sig Bn
1st Cav	1st MG Bn
1st Brig	CO Tns
2d Brig	1st Corps (4 copies)
1st FA Brig	War Diary
1st Engrs	APM

NOTE:—In future orders the 1st MG Bn will join the division reserve which will be placed more centrally, north of Mt. Vernon S. H.

As long as the position is covered by the 1st Cavalry and the infantry outposts all energy can be expended on preparation of the defensive position, which would be fully occupied within the next 36 hours only in emergency.

THE DIVISION ADMINISTRATIVE ORDER

1st Division,
HANOVER,
15 Sept 19, 10:00 AM.

ADMINISTRATIVE ORDERS No 2 } To accompany FO No 3, 1st Division

Maps: General Map, 1"=10 miles and 1:21120 New Oxford, Bonneauville, Gettysburg, Arendtsville, Knoxlyn, Hunterstown Sheets.

I. SUPPLY.

A. *Railhead*: NEW OXFORD.

B. *Rations*: Distributing points on and after 16 Sept as follows:

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1. RJ 548 (357.1—749.5):
   1st Brig ---------- 7:00 AM
   1st LA ---------- 8:00 AM
   1st Sn Tn ---------- 8:20 AM
2. RJ 587 (357.8—746.2):
   2d Brig ---------- 7:00 AM
   2d LA ---------- 8:00 AM
   3d HvA ---------- 8:40 AM
   1st Engrs ---------- 9:00 AM
3. Eastern exit of GETTYSBURG (or by special arrangement):
   1st Cav ---------- 6:00 AM
4. BONNEAUVILLE:
   All other units ---------- 9:00 AM

C. *Ammunition*:

Refilling point: NEW OXFORD.
Distributing stations:
1st LA at 550 (356.9—749.0).
2d LA at 529 (357.9—746.3).
3d HvA at Battery Positions.
1st Brig at 550.
2d Brig at 529.
All other units at SQUARE CORNER.

D. *Engineer Material*:

Engineer dump consists of entrenching tools, and wire in woods near CR 516 (355.5—747.0).

II. EVACUATION.

A. *Men*:

1. *Dressing Stations.*
   a. For 1st Brig sector vicinity CR 700 yds SE CR 587. Covered by one ambulance company. Ambulances via 612—598—560—572—562—548—588 road.
   b. For 2d Brig sector vicinity road east of WOLF HILL. Covered by one ambulance company. Ambulances via 612—601—617—SWEET HOME S. H.—572—587—535—516—452.
   c. 1st Cav and attached troops will be covered by detachments from ambulance control station, vicinity RJ 548 (357.1—749.5).
   d. SSW: vicinity CR 601 (NE of BONNEAUVILLE).
2. *Field Hospitals.*
   a. Sorting hospital, gas hospital and 1st Med Sup U vicinity RJ 612.
   b. Sick and wounded, and depots for slightly gassed vicinity STORE CR (NE of SQUARE CORNER).

B. *Animals*:

Collection station for sick and wounded animals:
1st Mobile Veterinary Section at A. SMITH 1½ miles NE of BONNEAUVILLE.

III. ROADS:

A. *Maintainance*: by division engineer.
B. *Circulation*: free circulation east of LOW DUTCH ROAD (inclusive). Single vehicles only, at 1 mile distance, and authorized messengers will be allowed during hours of daylight west of above limit without special authority.
C. Traffic Control: By military police east of WOLF HILL—ROCKY GROVE S. H. RIDGE at all important crossroads and at distributing stations.

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IV. SALVAGE AND BURIAL:

Salvage by organizations within their areas as previously ordered. Burials, under the general supervision of the Div Sn I. The senior chaplain of the division is responsible for all records.

V. MILITARY POLICE:

Straggler posts will be established along the LOW DUTCH ROAD. The military police will arrest all stragglers and all enlisted men going to the rear without proper authority and send them to MT. VERNON S. H., where the officer in charge will return them to their proper organization with necessary report.

VI. PRISONERS OF WAR:

Will be sent to collection points at MT. VERNON S. H. from whence they will be sent to the stockade at GALLAGHER farm house (1 mile NE of BONNEAUVILLE).

VII. TRAINS:

CO Tns will release division trains for combat operations upon arrival at destination.

Train parks as follows:

1st Brig (less 2d Inf) -- in woods 500 yds north of 548.
2d Inf ---------- in woods just east of 548.
2d Brig------ in woods east of 535S MT. VERNON S. H.
1st FA Brig (less 1st LA) ---- in woods east of 587.
1st LA ------ east of 548 (N of MT. VERNON S. H.)
1st Engrs and Engr Tn ---------- 516.
Sup Tn ---------- BONNEAUVILLE.
Am Tn ----------SQUARE CORNER.
Hq Sn Tn ---------- 612.
Hq Tns ----------BONNEAUVILLE.

Contact maintained with G1 at division CP, by mounted agents from all trains.

By command of Major General A.

X Y
Chief of Staff.

Distribution:

Div Staff
CO Tns
1st Brig (4)
2d Brig (4)
1st FA Brig (5)
1st Engrs
1st MG Bn
Sn Tn
APM
Engr Tn
F Sig Bn
1st Cav
Hq Tr
1st Obsn Sq
1st Corps
2d Div

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ANNEX No I TO FIELD ORDERS No 3, 1ST DIVISION, 15 SEPTEMBER 19.

ARTILLERY

1st FA Brigade,
HANOVER,
15 September 19, 10:00 AM.

FIELD ORDERS
No 3

Maps: General Map, 1"=10 miles and 1:21120, New Oxford, Bonneauville, Gettysburg and Hunterstown Sheets.

1. Red columns of all arms are reported advancing through SOUTH MOUNTAIN from CHAMBERSBURG and SHIPPENSBURG, heads of columns near CASHTOWN and ARENDTSVILLE.

   Our 2d Div follows immediately in rear of the 1st Div. The remainder of the corps advances from YORK tomorrow morning.

   The 1st Div will take up a defensive position east of GETTYSBURG which will be extended to south by the 2d Div upon arrival, the 1st Brigade organizing the position from woods near 579 (on WESTERN MARYLAND R. R.) to a point 600 yards NE of hill 566 and the 2d Brig extending the position to include 552 STEVENS HILL (inclusive). The independent cavalry (1st Cav with 1st MG Bn attached) secures the crossings of MARSH CREEK from GREENMOUNT to SEVEN STARS and the line from SEVEN STARS to TEXAS. If driven back, the independent cavalry will cover our flanks and will hold the 2d Div position until the arrival of the 2d Div.

   Left boundary 1st Brig sector BRICK KILN—606—550—SQUARE CORNER (exclusive). Right boundary 2d Brig same line (inclusive).

2. This brigade will support the 1st Div.

3. (a) The 1st LA will support the 1st Brig, paying special attention to protection of right flank from 572 to GRANITE HILL STATION.

   (b) The 2d LA will support the 2d Brig, and prepare to cover the 2d Division position with four batteries, from STEVEN'S HILL to ROUND TOP (inclusive).

   (c) The 3d HvA will be placed in general support; guns will be installed so that one battalion can cover the right flank to GRANITE HILL STATION and two battalions the 2d Div position from STEVEN'S HILL to ROUND TOP (inclusive).

   (x) 1. All light batteries will be in position by 5:00 PM. Heavy batteries by 7:00 PM.

   2. Firing data will be prepared for points up to extreme range on all roads radiating forward from GETTYSBURG and upon close objectives.

   3. Specific missions for close defense will be issued later.

   4. Battery positions and battalion command posts will be reported as soon as selected.

4. See administrative orders.
   Station for Slightly Wounded 601 NE of BONNEAUVILLE.

5. (a) Division Axis of Signal Communications: HANOVER ROAD; 1st Brig: ROCKY GROVE S. H.—586—527—531—488; 2d Brig: HANOVER ROAD.
   Axis of Artillery Signal Communications: HANOVER ROAD.

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(b) Command Posts:
1st Div and 1st FA Brig (after 3:00 PM): BONNEAUVILLE.
1st Brig: ROCKY GROVE S. H.
2d Brig: farm house 500 yards SW of 550 (NE of WOLF HILL).
1st LA: ROCKY GROVE S. H.; Echelon, farm house (357.6—750.9).
2d LA: farm house 500 yards SW of 550 (NE of WOLF HILL); Echelon, farm house near 550 (356.2—746.3).
3d HvA: BONNEAUVILLE; Echelon, COSHUN—358.7—746.7.

X,
Brig Gen.

Copies to:
1st Div (12)
Brig Staff (6)
1st LA (3)
2d LA (3)
3d HvA (4)

NOTE:—It is evident that a detailed plan of artillery defense, if desired, could not be issued until after the infantry plan of defense is made known.

Signal Communications

CAPTAIN O. S. ALBRIGHT,
Signal Corps

When the order to take up the defensive position is received by General A the division command post has not left Hanover. The advance message center, radio and telephone details have been sent forward to establish the command post at Bonneauville and the cavalry have interrupted telephone and telegraph communications forward from Gettysburg. Message center, radio and telephone details are still operating at Hanover and will continue to do so until the new command post is opened at Bonneauville.

The command posts have been designated as follows:

1st Division, Bonneauville.
1st Brigade, Rocky Grove S. H.
2d Brigade, farm house 500 yards northeast of Wolf Hill.
Division reserve, crossroads 425 on Baltimore Turnpike.
1st Cavalry, in the vicinity of Gettysburg.
1st Field Artillery Brigade, Bonneauville.
3d Heavy Artillery, Bonneauville.
1st Light Artillery, Rocky Grove S. H.
2d Light Artillery, farm house 500 yards northeast of Wolf Hill.
Air service landing field, Bonneauville, after 3:00 PM.

Should an advance be contemplated the natural line of advance of the division command post is the Hanover Road. The farm house at road junction 550 on the Hanover Road affords a good location for the division forward communication center, which is centrally located with respect to the brigade command posts and those of the two light artillery

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regiments. The division reserve at 425 is, however, quite isolated with respect to the other command posts.

The communication would be as follows:

Couriers:

Between the message centers of all units.

Radio:

Between division and corps.
Between division and brigades.
Between division and division reserve.
Between division and cavalry.
Between division and air service landing field.
Between brigades and regiments.
Between regiments and battalions.

Telephone:

The commercial telephone lines would be used from Bonneauville to the corps at Hanover.

The field signal battalion would lay field wire forward from Bonneauville to road junction 550 where a forward communication center would be established and from this center they would lay lines to each infantry brigade command post. Since there will be sufficient time, four circuits will be laid from the division to the forward communication center and two from the forward communication center to each infantry brigade. Two circuits on the main axis and one to each brigade command post will be turned over to the artillery brigade for its use.

Each infantry brigade will lay its own wires to its regiments.

Infantry and artillery regiments will lay wires to their own battalions.

The field signal battalion would also assure telephone communication from Bonneauville to the division reserve at 425. For this purpose a commercial telephone circuit from Bonneauville to Two Taverns could be used if such existed, and field wire laid forward from Two Taverns to the reserve.

This last mentioned telephone line would probably become an important one and would be ready for the following contingencies:

(a) For use to the division reserve at 425.

(b) To be extended to the reserve if they are put in the line between Culps Hill and Round Top.

(c) To be extended to the command post of the cavalry if they are forced to fall back and occupy the position between Culps Hill and Round Top.

(d) For use as a lateral line to the 2d Division when that division takes over the sector.

Although lateral telephone communications between adjacent divisions is a function of the corps, yet division signal troops may be directed by the corps to do this work if occasion demands.

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Organization of Brigade Sector

ORDERS OF THE 1ST BRIGADE, INCLUDING THE BRIGADE MACHINE GUN PLAN

CAPTAIN WALTER C. SHORT,
Infantry

Brigadier General C, 1st Brigade, received Field Orders No. 3, 1st Division, at 10:00 AM. At this time he was at the head of the main body of the right column and was about 200 yards east of crossroads 606. The point of the column was about half way between crossroads 562 and crossroads 617. A glance at the march graphic showed General C that it would be necessary to give orders to the 1st Infantry before the orders for taking up a defensive position could be issued, but that other organizations could continue the march as ordered and receive their orders for taking up a defensive position before it would be necessary for them to turn off the line of march.

General C gave the following verbal order to Major C, commanding 3d Battalion, 1st Infantry, who was riding about 100 yards in rear of him:

> "The division takes up a defensive position. Your battalion will form part of the division reserve. You will proceed to road junction 425 via the 562—550—536—473—452—425 road, reporting your arrival to the division commander at Bonneauville. You will receive further orders upon your arrival at crossroads 425."

General C had no orders as to what route should be followed by this battalion in moving to its position so he directed it to move by the route that would least conflict with the route of the left column.

General C sent the following written message to the Commanding Officer, 1st Infantry:

1st Brig,
Crossroads 606,
15 September 19, 10:12 AM.

Message No 5.
By motorcycle.
CO, 1st Inf.

Halt the advance guard at hill 618 and close up your column. Establish a march outpost to protect your command and the main body until its arrival at I. P. PLANK. Your 3d Bn has been directed to proceed to CR 425 on BALTIMORE TURNPIKE to form part of division reserve. Orders follow.

C,
Brig Gen.

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General C then proceeded with his adjutant, an aid and brigade machine gun officer to hill 657, where he proceeded to study the map and the ground with a view to issuing his order for the occupation of the defensive position.

The division order gave in general terms the main line of defense and gave the limits of the brigade sector.

From the wording of the order General C estimated that it was the purpose of the division commander to adopt temporarily a passive defense until the arrival of the remainder of the corps. Whether the defense was to be active or passive would have a great influence on the way in which General C would occupy the position. It would determine to a great extent the size of the brigade reserve and both the size and the disposition of the regimental reserves. Since the defense is to be passive it will not be necessary for General C to hold out a large brigade reserve. In view of the size of the reserve held out by the division, one battalion of infantry and one machine gun company will be ample.

It was necessary for General C to make an early decision as to the strength of the brigade reserve as the number of battalions remaining would have some influence on the dispositions of the command. The disposition of the command will depend upon the following conditions:

The number of positions to be occupied.
Whether the outpost position is occupied by a complete battalion or battalions or whether the battalions occupying the first position send forward fractions of their commands and establish their own outposts.
Whether the defense is to be active or passive.
The frontage of the position.
The number of sites on the main line of defense suitable for organizing centers of resistance.
The number of battalions available.

The time available for the preparation of the position will probably not exceed thirty-six hours. The division order gave no instructions as to the organization of more than one position. General C decides, therefore, that only one position, in addition to the outpost, will be occupied.

The outpost position may be occupied in one of three ways:

A complete battalion or battalions may occupy it without extending into the main defensive position.

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The battalions occupying the centers of resistance on the first position may send forward complete companies to furnish the outposts for the battalions.

The companies of the battalions in the centers of resistance may send forward a platoon or platoons to furnish the outposts.

Where the command occupies more than one battle position complete battalions will generally be used to furnish the outposts, since it will not be practicable for battalions to extend over the complete depth.

Where only one position is occupied unity of command and tactical control are made easier by having the battalions extend over both the outpost position and the battle position. Whether platoons or complete companies would furnish the outposts under these conditions would depend on the depth of the outpost position. In this case the division order directs that the line of observation shall be from 1500 to 2000 yards in advance of the line of resistance, which makes it advisable to use complete companies. Were the outpost position very shallow it would be advisable to have the companies send forward platoons.

Where the defense is to be an active one it will usually be preferable for the regiments to occupy the centers of resistance very lightly and hold complete battalions on the regimental reserve line so as to be able to take advantage of the repulse of the enemy and make strong counter-attacks. Where the defense is passive the centers of resistance should be more strongly held, the forces held in reserve being correspondingly weaker. Since these forces will be used only for local counter-attacks to regain part of the line captured by the enemy, it will be advantageous frequently to distribute the regimental reserves along the reserve line with a company at each place instead of holding them all in one position.

A unit assigned to an area in which the depth as compared with the frontage is very great is more effectively controlled by disposing the units in depth (in column), while in the inverse case, control is more effectively insured by disposing them abreast. In this case the depth is not great since only one position is occupied. The frontage on the contrary is great. The position designated by the division order has a frontage of 3000 yards and in order to

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make the flank secure, the woods northeast of hill 579 will have to be occupied, making the total frontage for the brigade 4000 yards. It is decidedly advantageous, therefore, to place the four battalions abreast.

There are four sites on the main line of defense which are suitable for organizing as strong points. They are: hill near 579 and the woods to the northeast; hill 612; hill 618; the woods west of J. Wamer.

General C therefore decides to place the four battalions abreast on the main line of defense and to have each battalion extend over both the outpost position and the battle position. Having arrived at this decision he is now in a position to consider the division of the brigade sector into subsectors, and the location of the line of observation, the line of defense of the outpost position, the main line of defense in greater detail, the battalion reserve line, the regimental reserve line and the location of the brigade reserve.

The line of observation selected extends from Rock Creek west of the brick kiln north along the creek to the 488—531 road, then, leaving the creek, extends to McElheny, then to woods 1000 yards west of road junction 576, then to 517 W (1000 yards northeast of road junction 576).

The line of resistance of the outpost position selected extends from the brick kiln along the road to crossroads 527 and crossroads 576. The line running through crossroads 531 would be easier to defend than the line running through crossroads 527, but it is too far from the main line of resistance.

General C decides to hold as a main line of resistance the following position: woods northeast of 579—hill at 579—hill 612—hill 618—woods west of J. Wamer—point 600 yards northeast of hill 566.

General C from the map and his limited observation of the ground cannot select a suitable battalion reserve line and decides to leave this to regimental commanders.

He selects as a regimental reserve line: hill 627—M. Eckert—western edge of large woods in rear of left part of brigade sector.

General C decides to place the brigade reserve in rear of the right flank where it would be available to protect the

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flank but at the same time near roads leading to all parts of the sector. He places the infantry battalion in the vicinity of crossroads 588 and the machine gun company on hill 657. This company will thus be in a position to protect the right flank of the position by fire.

The brigade sector would be divided into two subsectors with the boundary between the subsectors such as to nearly equalize the subdivisions of the outpost position and to give each subsector suitable ground for the organization of two centers of resistance. The line selected is McElheny —farm house 300 yards northeast of crossroads 527—hill 612—road junction 590—crossroads 588, all points of boundary to be included in the north subsector.

Time is not available for the preparation of more than the line of resistance of the outpost position and the main line of resistance. Work will be carried out simultaneously on these two lines. Nothing will be done at the present toward strengthening the battalion reserve line and the regimental reserve line. One company of engineers will be assigned to each subsector to assist in the organization of the ground while the third company will be employed to open a road through the woods so as to connect road junction 587 with the unimproved road leading southeast from crossroads 586. Two companies of the brigade reserve will assist in this work while the other two will assist in the organization of the right subsector.

1st Brig,
Hill 657,
15 Sept 19, 11:30 AM.

FIELD ORDERS
No 4

Map: General Map, 1"=10 miles and 1:21120, Gettysburg and Hunterstown sheets.

1. Red column of all arms are advancing through SOUTH MOUNTAIN from CHAMBERSBURG and SHIPPENSBURG. Heads of columns were approaching CASHTOWN and ARENDTSVILLE at 10:00 AM.
   Our 1st and 2d Divs take up a defensive position on the line 579 (on W. M. R. R.)—STEVENS HILL—ROUND TOP, to cover the deployment of the corps in preparation for an attack. Our division occupies the sector from 579 to STEVENS HILL (both inclusive). The 1st Cav is covering the front of the division, two troops cover the right flank.
2. (a) This brigade will organize and defend the north brigade sector, extending from woods northeast of 579 to point 600 yards northeast of hill 566.
   (b) Positions:

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Outpost position:

Line of observation: high ground west of ROCK CREEK from point west of BRICK KILN to 488—531 road—MCELHENY HOUSE—woods 1000 yards west of road junction 576—517W (1000 yards northeast of road junction 576).

Line of resistance: BRICK KILN—crossroads 527—road junction 576.

Battle position:

Main line of resistance: woods northeast of 579—579—hill 612—hill 618—woods west of J. WAMER—point 600 yards northeast of hill 566.

Battalion reserve line: at discretion of subsector commanders.

Regimental reserve line: hill 627—M. ECKERT—western edge of large woods in rear of left of brigade sector.

Brigade reserve: crossroads 588—hill 657.

(c) South boundary of brigade sector: BRICK KILN—point 600 yards northeast of hill 566—orchard on hill 567—hill 606—road junction 550 (all inclusive).

Subsectors:

North subsector.

South subsector.

Boundary between subsectors: MCELHENY—farm house 300 yards northeast of crossroads 527—hill 612—road junction 590—crossroads 588, all points of boundary included in north subsector.

3. (a)) 1. 1st Inf (less 3d Bn) will organize and defend the south subsector. Two centers of resistance will be organized in the battle position. An observation post will be established at BARLOW KNOLL. A connecting group of 1 platoon of infantry and 1 section of machine guns will maintain connection with the 2d Brig.

2. The 2d Inf (less 3d Bn) will organize and defend the north subsector. Two centers of resistance will be organized in the battle position. A detachment of one platoon of infantry and one platoon of machine guns will be posted for flank protection in the vicinity of crossroads 1000 yards northeast of 579.

(b) Two platoons of machine guns will be employed in the outpost position of each subsector. Machine guns will be assigned to connecting groups and flanking detachment as directed in pars 3(a) and 3(x)2. The 2d MG Bn (less Co D) will be employed for the defense of the battle position. The bulk of the guns will be posted in the vicinity of the main line of resistance being echeloned in depth not farther to the rear than the regimental reserve line. Co D 2d MG Bn will be posted on hill 657 as part of brigade reserve. It will be prepared to protect the right flank from its position. It will reconnoiter and prepare positions on the regimental reserve line.

For details see Annex No 1, Machine Gun Plan.

(c) The 1st LA will support this brigade.

(d) The 3d Bn 2d Inf and Co D 2d MG Bn will constitute the brigade reserve and will take position as follows:

3d Bn 2d Inf, vicinity of crossroads 588.

Co D 2d MG Bn, hill 657.

Two companies of the 3d Bn 2d Inf will assist in the organization of the north subsector, the other two companies will assist the engineers in opening a road through woods in rear of the left of the position.

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(e) Co A 1st Engrs will assist in the organization of the south subsector.

Co B 1st Engrs will assist in the organization of the north subsector.

1st Bn 1st Engrs (less Cos A and B), assisted by two companies 3d Bn 2d Inf, will open a road through the woods so as to connect road junction 587 with the unimproved road leading southeast from crossroads 586.

The 1st Bn 1st Engrs will take position in the vicinity of 353.7—751.0.

(x) Conduct of Defense.

(1) In case of attack the outposts will not be withdrawn without orders from these headquarters.

The battle position will be held at any cost.

(2) Each battalion of infantry will organize a center of resistance and will extend in depth from the line of observation to the regimental reserve line. One company from each battalion will occupy the outpost position and will be supported by two platoons of machine guns posted in each subsector. Not less than one company of each battalion will occupy the main line of defense. Not more than one company of each battalion will occupy the regimental reserve line.

The 1st Inf will furnish a connecting group of one platoon of infantry and one section of machine guns to maintain connection between the two subsectors.

(3) All troops will be employed in the organization of the outpost position and the main line of defense. No work will be done on the battalion and regimental reserve lines until further orders. Emplacements will be prepared for all machine guns.

4. Station for Slightly Wounded: crossroads 601 (1½ miles northeast of BONNEAUVILLE).

Field trains will join organizations.

For establishment of distributing stations and points for ammunition and rations and engineer dumps see administrative orders.

5. (a) Plan of Signal Communications: no change.

(b) Axis of communication:

1st Div: HANOVER ROAD.

1st Brig: ROCKY GROVE S. H.—crossroads 586—527—531—488.

1st Inf: same as 1st Brig.

2d Inf: road junctions 590—569—GRUBEY—road junctions 576—543.

(c) Command Posts:

1st Div: BONNEAUVILLE.

1st Brig: ROCKY GROVE S. H.

1st Inf: farm house 300 yards east of crossroads 586.

2d Inf: farm house 300 yards west of road junction 602.

2d MG Bn: ROCKY GROVE S. H.

C,
Brig Gen.

Distribution:

CG
CO 1st Inf
CO 2d Inf
CO 2d MG Bn
CO 1st Bn 1st Engrs
Brig Staff
1st Div

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MACHINE GUN PLAN

ANNEX No 1 TO FIELD ORDER No 4, 1ST BRIG, 15 SEPT 19.

1st Brig,
Hill 657,
15 Sept 19, 11:30 AM.

Maps: General Map, 1"=10 miles and 1:21120, Gettysburg and Hunterstown sheets.

1. Red columns of all arms are advancing through SOUTH MOUNTAIN from CHAMBERSBURG and SHIPPENSBURG. Heads of columns were approaching CASHTOWN and ARENDTSVILLE at 10:00 AM.

Our 1st and 2d Divs take up a defensive position on the line 579 (on W. M. R. R.)—STEVEN'S HILL—ROUND TOP, to cover the deployment of the corps in preparation for an attack. The 1st Cav covers the front of the division, two troops cover the right flank.

Our brigade holds the line: 579—point 600 yards northeast of hill 566.

South boundary of brigade: BRICK KILN—point 600 yards northeast of hill 566—orchard on hill 567—hill 606—road junction 550, all inclusive.

Boundary between subsectors: MCELHENY—farm house 300 yards northeast of crossroads 527—hill 612—road junction 590—crossroads 588, all included in north subsector.

North subsector: 2d Inf.

South subsector: 1st Inf.

POSITIONS.

Outpost Position.

Line of observation: high ground west of ROCK CREEK from point west of BRICK KILN to 488—531 road—MCELHENY—woods 1000 yards west of road junction 576—517W (1000 yards northeast of road junction 576).

Line of resistance: BRICK KILN—crossroads 527—road junction 576.

Battle Position.

Main line of resistance: woods northeast of 579—579—hill 612—hill 618—woods west of J. WAMER—point 600 yards northeast of hill 566.

Battalion reserve line: at discretion of subsector commanders.

Regimental reserve line: hill 627—M. ECKERT—western edge of large woods in rear of south subsector.

Brigade reserve line: crossroads 588—hill 657.

2. The machine guns will assist in the defense of the outpost position and the battle position.

3. (a) CO south subsector will employ two platoons in the outpost position of the south subsector. One section will be assigned to each of the two connecting groups furnished by south subsector.

(b) CO north subsector will employ two platoons in the outpost position of the north subsector. One platoon will be assigned to the right flank detachment.

(c) The 2d MG Bn (less Co D) will be employed in the defense of the battle position.

(d) Co D 2d MG Bn will be posted on hill 657 as part of the brigade reserve. It will be prepared to protect the right flank of the position. It will reconnoiter and prepare positions in the vicinity of hill 627, woods southeast of road junction 590, and point 353.1—751.0.

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(x) (1) For details of positions and missions of guns see Table 1. Commanders of subsectors will be consulted as to exact positions and lines of fire.
(2) The machine gun companies will be under the command of the following superior officers:
MG Co 1st Inf—CO south subsector.
MG Co 2d Inf—CO north subsector.
Cos A and B 2d MG Bn—Brigade MGO.
Co C 2d MG Bn—CO north subsector.
Co D 2d MG Bn—brigade reserve commander.
(3) One gun in each section in the battle position and brigade reserve will be designated for anti-aircraft defense.
(4) Emplacements will be constructed in all positions, including the brigade reserve, and will be carefully camouflaged.
(5) Cover trenches for gun squads will be constructed after the completion of the emplacements.
(6) In case of attack positions in the outpost position will be held until the receipt of orders to withdraw; in the battle position they will be held at all costs.
(7) Routes for the withdrawal from the outpost position will be reconnoitered.
(8) Barrages will be prepared for the assistance of local counter-attacks.

4. (a) Station for Slightly Wounded: crossroads 601 (1½ miles northeast of BONNEAUVILLE.
(b) Each company will establish an ammunition dump of 72,000 rounds. Combat wagons and carts at disposition of company commanders.
(c) Field train will join companies.

5. (a) Plan of Signal Communications:
Cos A and B will connect with command post of Brig MGO by telephone and runner. All other companies will connect with command posts of infantry commanders to whom assigned.
(b) Command Posts:
Brig MGO: ROCKY GROVE S. H.
Companies will notify Brig MGO of the location of their command posts.

By command of Brig Gen C.

X,
Maj,
Brig. Adj.

Official:
M, Maj, Brig MGO.

Distribution:
Same as FO 4, 1st Brig and following additional:
All MG Cos
2d MG Bn Staff

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TABLE No 1

To Accompany Machine Gun Annex to FO No 4, 1st Brig

Organization	*Position, vicinity of*	*Battle Mission*	*SOS or Normal Mission*
MG Co 1st Inf			
One platoon	BRICK KILN	Protect left flank. Cross fire with CR 531.	Same as battle mission.
One section	CR 531	Cross fire with BRICK KILN. Cover 531—488 and 531—543 roads.	Same as battle mission.
One section	Orchard at W. MONTFORT	Flank woods to northwest and southwest.	Same as battle mission.
One platoon	Connecting groups	Maintain connection between sectors and subsectors.	Same as battle mission.
MG Co 2d Inf			
One section	North edge woods on hill 576	Flank J. KAAS and FAIRVIEW S. H.	Same as battle mission.
One section	FAIRVIEW S. H.	Flank woods to northwest and southwest and CR 576.	Same as battle mission.
One section	CR 576	Protect right flank. Cover 576—562 road.	Same as battle mission.
One section	GRUBEY	Flank CR 576. Cover ridge to east.	Flank CR 576.
One platoon	CR at point 354.8—753.8	Protect right flank.	Same as battle mission.
Co A 2d MG Bn			
Two platoons	Woods west of J. WAMER	Flank BRICK KILN, hill 567 W. MONTFORT, hill 618. Cover CR 527 and R. R.	CARLISLE ROAD.
One section	Orchard on hill 567	Flank hill 566, woods west of J. WAMER.	CARLISLE ROAD.
One section	Orchard southeast of CR 586	Flank hill 618 and woods west of J. WAMER. Cover 586—557 road.	CARLISLE ROAD.
Co B 2d MG Bn			
One platoon	Hill 618	Flank J. WAMER, hill 576—hill 612.	531—543 road from CR 543 to 500 yards south.
One platoon	Hill 612	Flank hill 618 and 579.	531—543 road from CR 543 to 500 yards south.
One section	M. ECKERT	Flank hill 618, hill 612.	None.
One section	Hill 627	Flank hill 612 and 579.	None.
Co C 2d MG Bn	Hill 579 and woods to east	Protect right flank.	Same as battle mission.
Co D 2d MG Bn	Hill 657	Brigade reserve.	Protect right flank.

The brigade order provided for the use of two machine gun platoons in the outpost position of each subsector. Had the outpost been occupied by a complete battalion instead of parts of four battalions, it would have been better to have assigned a machine gun company to this battalion and to have supplied the machine gun sections at hill 576 and Grubey from the companies assigned to the defense of the battle position.

The machine guns assigned to the battle position were not distributed in very great depth. The position was too wide to permit this. The total depth of the guns in the

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battle position is only about 1200 yards. To make up for this lack of depth one machine gun company was held in reserve and while being located for the immediate protection of the right flank it was directed to reconnoiter and prepare positions along the regimental reserve line. It will be noticed that the positions selected are opposite the weak points of the line where the enemy is most likely to penetrate. While the infantry would be so placed as to counterattack these local penetrations from the flank, the machine guns can be more effectively used by reinforcing the point of the salient. They are thus in a position to take in flank any attempt of the enemy to widen the salient and are in the most favorable position for supporting the counterattacking infantry.

In this case the positions and missions could be given by a table better than by a diagram. Accurate locations and lines of fire cannot be selected by the map alone but can be determined only after a reconnaissance of the ground. For that reason it is preferable to state the missions in general terms. The machine gun company commanders were directed to consult with the subsector commanders even where they were not placed under the orders of these commanders. A certain amount of adjusting of the positions of the machine guns and infantry will always be necessary, although as a rule the infantry positions should conform to the best machine gun positions.

The order stated specifically under whose command each machine gun company would be. In the early days in France there was more or less friction over the question of the command of the machine guns which might have been avoided by a definite statement. The conditions will largely determine the question of command. In a deployed position it will usually be necessary to assign the machine gun companies directly to the infantry battalions that they are to support. Time will be the all important element. There can be no searching for the ideal positions. Some one must have the authority to say at once just what positions will be occupied by the infantry and what positions by the machine guns.

Where there is time to organize a position or in occupying a prepared position, the question of command will be

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determined by the mission of the guns. The guns should be under the command of the lowest commander who controls the complete sector in which their mission lies. In the outpost position the chief mission of the guns is the defense of the immediate front. Distant flanking fire will not play an important part. Therefore where the outpost position is occupied by a complete unit, the machine guns in the outpost position should be under the command of this unit. In the present case there would have been no serious objection to placing the four platoons under the command of the four battalion commanders. There would be some firing out of battalion sectors, however, and it was thought better to place them under the regimental commanders.

Practically all of the fire of Company C would fall within the north subsector. For this reason, this company was placed under the command of the subsector commander. Companies A and B, on the contrary, either have guns lolocated in both subsectors or have guns in one subsector with important firing missions in the other subsector. For this reason it was considered better to retain the direct control of these guns in the hands of the brigade machine gun officer.

Barrages for the assistance of local counter-attacks would be prepared by company or platoon commanders after consultation with the infantry commanders. The placing of these barrages would depend on the method of counter-attack of the infantry.

Sanitary Arrangements

The Medical Department estimate of the situation as influencing plan of collection, hospitalization, supply, and evacuation, and the plan of evacuation based upon the situation of the 1st Division, September 15th.

LIEUTENANT COLONEL M. A. W. SHOCKLEY,
Medical Corps

ESTIMATE OF THE SITUATION

The 1st Division has for its mission:

First: to occupy a temporary position in order to cover the development of the 1st Corps preparatory to an attack.

Second: to cover a position from Steven's Hill to Round Top to be occupied by the 2d Division tomorrow.

Third: to occupy and improve its ultimate position in the corps on the line 579—Steven's Hill, inclusive.

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Pending the development of the corps, the 1st Division, reenforced by the 2d Division, may sustain an attack by at least two Red divisions. As the corps will not arrive for three days, the 1st Division may be compelled to be on the defensive for two or three days. The 1st Division will perform the first two parts of its mission by use of the 1st Cavalry and the attached 1st Machine Gun Battalion occupying a line from Texas to Greenmount on an arc of some twelve miles. The third requirement of its mission will be performed by preparation of a defensive position from 579 to Steven's Hill, inclusive.

Mission of the Sanitary Service:—To cover the 1st Division and the 1st Cavalry attached during this period.

The surgeon, 1st Division, must arrange his sanitary service to cover the advanced positions of the cavalry and the ultimate position of the 1st Division. As the cavalry will be dispersed with contact detachments and patrols over an arc of about twelve miles extent, with its center approximately at the center of the position of the division, it would be impossible and incorrect to attempt to disperse the sanitary train over this area and yet fulfill the first condition of the mission. As the squadrons of the 1st Cavalry each have attached sanitary personnel and will be disposed in such a manner as to have headquarters covering a portion of this arc, and, as these squadron sanitary detachments are in turn covered by the regimental sanitary detachment, it will be possible to arrange for collection of sick or casualties from squadron or regimental aid points by ambulance company platoons sent out at stated times or on emergency calls for collection. Or when extensive action has occurred, litter bearers and aid parties may be sent out in motor ambulances to attend to collection and movement to field hospitals. This is the normal procedure when a division is operating with an attached cavalry unit. A reserve ambulance company or an ambulance control station covering the division sector can perform this duty for the time which it is required, as it is probable that the cavalry will not remain in the advanced position more than 48 hours. The surgeon will therefore dispose of his sanitary units in a manner to comply with the third part of the division

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mission, using a reserve ambulance company for collection or reenforcement in the 1st Cavalry and attached 1st Machine Gun Battalion.

The general situation indicates that the 1st Division will be committed to a defensive action for two or three days, followed by an attack on the Red forces, and that there is little possibility of the 1st Division being forced to retire from its present position. The situation requires the sanitary service to be so disposed and managed as to have at hand sufficient force for collection and rapid movement of casualties to the rear, with arrangements to afford relief and rest to maintain animals and men in proper condition for the subsequent advance.

The situation, by reason of the fact that retirement is not probable, does not require establishment of all units in order to secure most rapid evacuation, but rather establishment of sufficient to secure economical evacuation and maintenance of condition of personnel, and maintenance of adequate supply. The surgeon believes that fresh and well conditioned personnel and animals can best be secured by keeping one or more units of the ambulance and field hospital section at rest in reserve for proper relief of overworked organizations, or reinforcement, or for use in the attack. He further notes that the time element of the situation will not permit of extensive intrenching and bombproofing and, consequently, action must be taken in disposing of his sanitary units, to secure best advantage of natural or existing cover and covered routes. This is especially so by reason of the fact that the enemy will be furnished with corps artillery, and possibly the railway situation may permit the use of railway guns. The possible presence of long and medium range artillery as well as possibility of bombing will force him to distribute his establishments rather than mass them; and to increase their distance from the front. Examination of the terrain indicates that enemy light artillery positions would not be in advance of Seminary Ridge —Oak Ridge—Goodintent School House ridge and heavy artillery probably west of this.

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Sanitary Troops and Evacuation

The units of the division sanitary train are so disposed in the two columns as to permit their establishment for camp or combat as soon as their services are required. The railhead and evacuation point for the 1st Division is New Oxford. The 1st Division is covered by two evacuation ambulance companies attached to the 1st Corps. Evacuation hospitals have as yet not been sent west of York. The plan of evacuation, other than the designation of evacuation point and assignment of 1st and 2d Evacuation Ambulance Companies to cover the 1st Division, has not been received. This information, however, is sufficient. Given the evacuation point, the surgeon can choose the probable routes of evacuation from that point to the division, and can arrange the sites of his field hospitals to cover these in the most economical manner. Reference to the extent of the sector, consideration of the fact that the eastern portion of the York Pike will probably be in the zone of the division to move in on our right, and consideration of the position of the train at Bonneauville, with their probable routes to the railhead, indicate that road New Oxford—S. A. Smith—Square Corner—Bonneauville—or New Oxford—522—Brush Run S. H.—560—Bonneauville may be used as an evacuation route. Owing to the probability that the Bonneauville—560—Brush Run S. H.—New Oxford route will be used for division supply trains it is probable that the eastern route will be more satisfactory for evacuation purposes, and the surgeon decided to use this road. Necessarily the position of the field hospitals would be tied to the vicinity of this route.

Ambulances Companies and Regimental Aid Stations—Routes

Examination of the division sector shows: That the line of resistance of the north half of the right brigade sector is approachable by York Pike through the north and south roads intersecting it, and the south half only by the unimproved road intersecting York Pike at 586, but that many wood roads connect with the unimproved road; that the road 550—602 dominates the brigade sector for lateral

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communication, and also forward and rear communication, connecting with the York Pike, the Hanover Road, and roads between, which permit movements to the rear in direction of the route of evacuation near which the field hospitals must be placed. A considerable portion of the road is behind the ridge and hill 612 and well covered from observation. Along this road will probably be found natural features which will give relative shelter from fire with little improvement. The ridge will cover movement from the front to the rear. These features of this lateral road indicate that a dressing station must be placed somewhere along it, as its distance from the front conforms to the proper distance for a dressing station. Further examination of the right brigade sector indicates that it would probably be divided equally for occupation by two regiments and that the line of division would be near the line, McElheny —hill 612—crossroads 590—588. Battalion aid stations of the right regiment would be in the vicinity of brook east of M. Eckert and railway crossing 595, and the regimental aid station in the vicinity of the brook 250 yards east of crossroads 590. Battalion aid stations of the left regiment in the right brigade sector would be at the southeast corner of the woods extending southeast from J. Wamer, or behind the hill 618, probably on the stream line. The regimental aid station would be on the wood road at junction with unimproved road 900 yards southeast of 586. Except in the northern part of this subsector, the condition of roads does not permit use of motors west of the 550—602 road and horsed ambulances must be used in advance of this point. It is probable though, that the 586 unimproved road will be connected with the 550—602 road, and that communication may be had with the regimental aid station of the left regiment by this road without detour south. The positions of these regimental aid stations fix the position of a dressing station somewhere near the lateral road. Immediately behind the woods would be satisfactory on account of cover but is uneconomical as to distance. The crossroads 700 yards southeast of 587 equalizes distance, and provides cover and shelter, and three routes of movement to the rear and will be chosen. The situation at this time does not indicate that more than one dressing station will be necessary,

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but should the number of casualties require speed, another station can be thrown in if necessary, as there is room. The left brigade sector has a lateral unimproved road leading to the ridge connecting with Hanover Road and the Baltimore Pike. It has two unimproved branches leading to the front and several lateral wood roads. It can be evacuated by a movement east through 452—473—516 road, or by Hanover Road, but this last road is likely to be under fire and at other times congested with combat vehicles. For this reason, evacuation should be east, crossing Hanover Road, if necessary, at an unimportant point. The unimproved road east of the Wolf Hill ridge is about one mile distant from the line of resistance of the left brigade sector and well covered by the ridge to its west. Its connections to the front make it, somewhere within its length, a site for at least one dressing station. It can, however, only be approached by the Hanover Road and the road (given above) south of the Hanover Road. Motor cars cannot be expected to move on the unimproved road with facility, consequently a dressing station, by reason of the requirements for use of motors, must be tied to its intersection with the Hanover Road or the Wolf Hill—452—516 road. As its intersection with the last given road covers well the center of the left brigade sector, this point will be used as a site for a dressing station. Movements to the front of this dressing station cannot be made by motor ambulances on account of the condition of the wood roads with which it connects, and consequently horse ambulances will be required. At present not more than one dressing station is required.

Sites of Stations for Slightly Wounded and Field Hospitals

Having determined the sites of the dressing stations, the number, the method of movement of ambulances, and the beginnings of ambulance routes to the rear from the dressing station, the surgeon can now determine the ultimate routes from the stations and the site for the field hospitals together with the site of the station for slightly wounded as affected by these routes and the requirement of the position in front of the field hospitals. From the dressing station site in the northern brigade sector three routes

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were available; the two east by York Pike or Hanover Road are probably congested or exposed to fire on account of the importance of the route; another between the York and Hanover Roads. The surgeon chose the middle route which led through 588—548—572—560—594—606. He preferred this route as it avoided the York Pike and Hanover Road and lead to the accepted evacuation road near which the field hospitals were to be placed. For the route from the southern brigade sector he had already accepted movement east to 516 and can continue east via 535—587—572—Sweet Home S. H.—617. Movement farther east will bring ambulances to the evacuation road, and an intermediate point between these ambulance routes might be considered a satisfactory site for field hospitals, such as 601, inasmuch as it is near the intersection of these ambulance routes. However, it is not well provided with cover, water, or conveniences and is only 4 plus miles distant from our line of resistance. The surgeon therefore seeks another location farther to the rear on this route. The vicinity of crossroads 612 gives a distance of about 5 plus miles from our line of resistance and about 7 miles from possible site of enemy medium or long range artillery, affords water, cover, and conveniences and ample space. Provided it affords to the front a location for a site for slightly wounded, the surgeon will choose this site for establishment of a sorting and gas hospital; and also, as all ambulances from the front must come to this point, the site for the medical supply dump. Crossroads 601 gives an intersection of ambulance routes coming from the two subsectors which would give slightly wounded cases, moving by foot over this route, the support of ambulance convoy. This crossroad has houses at hand for shelter of cases pending organization and feeding for movement to the rear and is well in front of the field hospitals, also has distance from the front sufficient to preserve this station relatively from interference by medium range artillery fire. The surgeon chose this site. As he has not personnel or materiel designated for duty at this station, he must find this personnel in an organization which will not be used, or which is near at hand. The stabilization of the regiments occupying the sector of the 1st Division will make use of regimental aid stations advisable. Materiel for these can come from the

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camp infirmary equipments. The 1st Heavy Artillery will not occupy a position as a regiment but will be scattered over the entire rear area, as will be the 1st Engineers. Use of a regimental aid station for either of these organizations is unnecessary, consequently they will not require materiel for them, and two camp infirmaries will be available for other uses. The surgeon will use these to provide materiel for the station for slightly wounded, and will require the commanding officer, sanitary train, to provide personnel, expecting him to use personnel from field hospitals near at hand or in reserve. On account of possibility of long range fire, the surgeon does not desire to mass his organizations so that he will have all of his eggs in one basket; therefore, having selected the vicinity of 612 for a gas and sorting hospital, he would choose a position somewhat farther to the rear for care of moderate sick and wounded. Also, as he desires to give the slightly wounded and slightly sick walkers the benefit of all facilities and rest which may aid in their recovery, he will establish with these field hospitals a depot for slight cases where they may be held enroute pending further movements to the rear. He will use empty supply trucks going to the railhead for further transportation of these cases. As Bonneauville is the station for supply trains, it is probable that movement to the railhead will occur by way of Brush Run S. H. or Square Corner—S. A. Smith; and there seems no reason why empty trucks may not run by way of Square Corner. Store crossroads on road northeast of Square Corner about 1 mile from the site of the sorting station, could be chosen as a site for two field hospitals. It furnishes facilities and cover and water and is on the line of Medical Department evacuation through New Oxford. He will choose this as a site for the two remaining field hospitals and the depot for slight cases which he can move from the station for slightly wounded by way of 606 in detachments without interfering with the field hospitals in advance. Because of special training in sorting work and gas work, he will choose the 1st and 2d Field Hospital Companies for duty as sorting and gas hospitals. As they require use of the mobile surgical unit and a degassing unit, these will be attached to these hospitals in this position. The 3d and 4th Field Hospital Companies will go to

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the position near Store crossroads, together with the mobile laboratory which will not be required for use during the temporary station of the sorting hospital.

Ambulance Control Station

The fact that motors cannot move farther to the front than the dressing station and that only the ambulance company is horsed indicates that some action must be taken to furnish each of the ambulance companies establishing dressing stations at the front with horsed ambulances, and, as one of these ambulance companies must necessarily be horse-drawn or motor, evacuation must be arranged for it. Furthermore, as the action will continue for about three days, arrangements must be made for rest of personnel and animals and the care and repair of materiel. Co-ordination of all of these cannot be arranged by individual ambulance company commanders; therefore it seems advisable to pool transportation under control of the director of ambulance companies and to a certain extent personnel of the ambulance companies in order to cover these requirements. The surgeon, therefore, determined to have one company in reserve in absolute rest, two companies established in the rear of the Wolf Hill—Rocky Grove S. H. line and one in partial reserve and rest at an ambulance control station as a local reserve under control of the director of ambulance companies. Further to pool all transportation of the last three given organizations at some central point sufficiently removed from small caliber artillery fire as to permit adequate rest and yet sufficiently far advanced to permit assignment to duty for immediate reenforcement or replacement of troops in advance. In looking over the road net he found no point on ambulance routes which is an intersection of ambulance routes sufficiently near the sites of the dressing stations to permit this. A position in the vicinity of 548 has a sufficient forested area to permit shelter of transportation detachments and a complete ambulance company, and water and other conveniences at hand. It also covers the northern route of ambulance movement and leads to the southern route. No other position affords all of these conveniences, therefore, the surgeon chose this site. He directed in the plan of evacuation that the headquarters and the director of

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ambulance companies move to this point and assigned a motor ambulance company for duty thereat, in addition to assigning the ambulance detachments of the two companies established. Actual position of the ambulance companies was determined on the basis of a position in column, convenience in obtaining the position to which they are assigned and the fact of their position on the duty roster of the ambulance company section. The director of ambulance companies is in charge of collection of casualties. He has been given three ambulance companies with which to do this. One is ordered in partial reserve at the ambulance control station, which he may use for immediate reinforcement or replacement of exhausted personnel or equipment. The one ambulance company placed in complete reserve can be ordered out on request by the director to the division surgeon. As this ambulance company is intended to have complete rest, it will be ordered to the site of the field hospitals at Brush Run in order to facilitate supply and to render it available for short hauls in rear sectors, thus giving the personnel sufficient exercise and occupation.

As a result of these considerations and decisions, the surgeon prepared the division plan of evacuation which follows:

OFFICE OF THE SURGEON, 1ST DIV,
HANOVER, PA.
15 Sept 19, 10:30 AM.

MEMORANDUM FOR: G1.

SUBJECT: *Plan of Evacuation, 1st Division, Gettysburg Sector.*

1. Find below plan of evacuation covering occupation of position 1st Division about Gettysburg, 15 Sept 19.

Organization and location	No of Units	Function
I. COLLECTION:		
a. Sn Tn 1st Div	1	Establish SSW vicinity CR 601 (NE BONNEAUVILLE)
Amb Cos	4	
b. 4th Amb Co (less Amb Det) vicinity CR 700 yards SE of 587.	1	Collect 1st Brig Sector
1st Amb Co (less Amb Det) vicinity road east of WOLF HILL.	1	Collect 2d Brig Sector
Hq Amb Sec, 2d Amb Co and Amb Dets 1st and 4th Amb Cos, vicinity CR 548.	1	Ambulance control station
3d Amb Co, vicinity STORE CR (NE SQUARE CORNER).	1	Reserve

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c. Camp Infirmaries:	8	
To all regiments (except 1st Engrs, 1st HvA, 1st Cav) vicinity CR 601.	6 2	Regtl Aid Sta SSW
II. HOSPITALIZATION:		
Hq Sn Tn; Hq F Hosp Sec	2	
2 F Hosp Cos Vicinity CR 612	2	Sorting hospital Gas hospital
2 Hosp Cos Vicinity STORE CR	2	Sick, wounded and depot slight cases
III. SUPPLY:		
1st Med Sup Unit Vicinity CR 612	1	Dump and refill, Railhead NEW OXFORD

IV. ROUTES AND DESTINATION:

a. All walkers via SSW—slight cases from SSW to depot slight cases STORE CR.

b. All other cases to sorting hospital.

Ambulances 1st Brig sector via road 612—598—560—572—562—548—588.

Ambulances 2d Brig sector via road 612—601—617—SWEET HOME S. H.—572—587—535—516—452.

V. CLASSIFICATION: Routine.

VI. EVACUATION: Evacuation point NEW OXFORD; wounded able to walk to the base from depot slight cases by truck. Transport cases by corps.

2. It is requested that all empty trucks enroute to railhead be reported to CO Depot Slight Cases, STORE CR, for transportation of walkers.

3. It is requested that action be taken to ensure that local aid posts, battalion and regimental aid stations, bearer posts and dressing stations secure aid and material for construction of fire cover.

4. 1st Cavalry and attached troops will be covered by detachments from ambulance control station.

XYZ,
Lt Col, Med Corps,
Surgeon, 1st Division.

Map Problem—A Defense Position

COLONEL L. R. HOLBROOK,
Field Artillery

Maps: General Map, Gettysburg-Antietam, 1" = 10 miles, and 1:21120, Arendtsville, Gettysburg, Knoxlyn, Fairfield sheets.

General Situation:

Maryland, Red, and Pennsylvania, Blue, are at war.

A Blue corps in a rest area west of South Mountain, with headquarters at Chambersburg, has fully recuperated from recent operations, and has been ordered to move to the vicinity of Gettysburg to intercept the march of a Red

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corps reported to be in the Reistertown—Owings Mills area (northwest of Baltimore) preparing to move on Carlisle with a view to carrying hostile operations into Blue territory.

Special Situation (Blue):

The 1st Division (1st Squadron, 1st Cavalry, attached), covered by independent cavalry (2 regiments less 1 squadron), leads the Blue corps in its march through South Mountain. On the night of 15-16 July, 1919, it is camped with its advance cavalry on the line Mummasburg—Seven Stars—Knoxlyn with patrols along Willoughby Run, the advance guard in and about Cashtown and Hilltown, the leading elements of the main body in the fields west of Rock Top and the main body camped along the route of march.

The independent cavalry is camped along White Run—Rock Creek with patrols in advance of the line Barlow—Germantown—Bonneauville—Guldens.

The division headquarters is established at Cashtown with railhead at Orrtanna. The division is in the following order of march:

Advance Cavalry
1st Squadron, 1st Cavalry

Advance Guard
1st Infantry
1st Battalion, 1st Light Artillery
Company A, 1st Engineers
4th Ambulance Company
4th Field Hospital Company
Field trains of advance guard
1st Field Signal Battalion (between main body and the advance guard)

Main Body
Division Headquarters
Company B, 1st Engineers
1st Brigade (less 1st Infantry)
1st Brigade. Field Artillery (less 3d Heavy Artillery and 1st Battalion, 1st Light Artillery, and less combat trains)
2d Brigade
1st Engineers (less Companies A and B)
Engineer train
Combat trains of 1st and 2d Field Artillery (less combat train of 1st Battalion, 1st Light Artillery)
3d Heavy Artillery
1st Machine Gun Battalion
1st Sanitary Train (less 4th Ambulance Company and 4th Field Hospital Company

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Field trains of main body
1st Observation Squadron
1st Ammunition Train
1st Supply Train

At 9:00 PM Major General A, commanding the 1st Division, receives the following message from the corps commander:

Reds reported to have started north in two columns, each preceded by one regiment of cavalry. Our airplanes report the Red cavalry on the line TANEYTOWN—EBBVALE, and the advance elements of Red infantry in camp at WESTMINSTER and three miles north of REISTERTOWN at 7:00 PM tonight. The independent cavalry is placed under your orders. Its commander has been ordered to report to you at CASHTOWN at 10:30 tonight. Take up a defensive position west of GETTYSBURG and cover the debouchment and development of the corps.

The 2d and 3d Divisions follow close upon the 1st Division; the 4th Division leaves SHIPPENSBURG for ARENDTSVILLE tomorrow morning.

First Requirement:

1. Decision in brief of General A.

2. The formal field orders of General A for the organization and occupation of the position selected and the conduct of the defense.

NOTE:—Marsh Creek is fordable above Blackhorse Tavern.

An Approved Solution

COLONEL L. R. HOLBROOK,
Field Artillery

First Requirement:

General A's decision. To take up a defensive position from 1 to 2 miles east of Seven Stars; the main line of defense extending from Marsh Creek near hill 546 (344.4—750.5) to hill 668 (346.5—755.8); outpost line of resistance about one mile in advance; independent cavalry to seek contact with and defeat the Red cavalry, oppose advance of Red columns and protect our right flank in retirement; advance cavalry to maintain contact with the independent cavalry and cover our left flank.

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Second Requirement:

Formal orders of General A.

1st Division,
CASHTOWN,
15 July 19, 11:00 PM.

FIELD ORDERS }
No 3 }

Maps: General Map, 1"=10 miles and 1:21120, Arendtsville, Gettysburg, Knoxlyn and Fairfield sheets.

1. A Red corps is moving from the REISTERTOWN area toward GETTYSBURG in two columns, each covered by a regiment of cavalry reported on the line TANEYTOWN—EBBVALE at 7:00 PM today; the advance infantry elements at WESTMINSTER and 3 miles north of REISTERTOWN respectively.

   Our 2d and 3d Divisions follow close in rear of our column and the 4th Division leaves SHIPPENSBURG for ARENDTSVILLE tomorrow morning. The independent cavalry (consisting of 2 regiments less 1 squadron) has been placed under the orders of the Commanding General, 1st Division.

2. (a) This division will take up a defensive position about 1 mile east of SEVEN STARS from MARSH CREEK near 546 (344.4—750.5) to hill 668 (346.5—755.8) covering the debouchment and development of the corps. Movement will begin at 6:00 AM tomorrow, each unit providing for its own security. Units assigned to the left brigade sector will move via the MUMMASBURG ROAD and all other units via the CHAMBERSBURG ROAD

   (b) Main line of defense along the ridge 546 (344.4—750.5) —604—667—647—668 (346.5—755.8). Outpost line of resistance: BLACKHORSE TAVERN—HERR RIDGE—hill 582 (347.4 —752.1), hill 664 (348.9—756.1). Regimental reserve line: hill 627—603—MUMMASBURG.

   (c) Left boundary right brigade sector: farm house (345.5—752.9)—farm house (347.4—752.1)—J. FORNEY—COUNTY ALMS HOUSE, all inclusive. Right boundary left brigade sector: same line exclusive.

3. (a) 1. The 1st Brigade will organize the right sector, covering its right with a detachment.

   2. The 2d Brigade will organize the left sector, connecting its lines of outpost observation and resistance, and its main line of defense with those of the right brigade. It will cover its left with a detachment.

   (b) The 1st Machine Gun Battalion is attached to the independent cavalry. Its commander will report to these headquarters for instructions.

   (c) The 1st Field Artillery Brigade will support the 1st Brigade with one light regiment from the area between SEVEN STARS and HAMMERS and the 2d Brigade with one light regiment from the brigade sector area south of MUMMASBURG. In each regiment, one battery of each battalion will be pushed forward to the vicinity of the main line of defense for firing upon distant objectives and roads leading toward the position. Provision will be made for firing well to the flanks, and each regiment will be prepared to support the adjacent brigade sector with one battalion.

   The 3d Heavy Artillery will be held in general support, one battalion specially covering the left flank, the other two the right flank. One of the latter will be installed well forward for firing on distant objectives to the east and southeast.

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(d) The division reserve, consisting of one battalion from each brigade, will be posted in the vicinity of McKNIGHTSTOWN STATION.

(e) The independent cavalry (1st MG Bn attached) will gain contact with the Red cavalry, attack and defeat it and delay the march of the Red columns. In falling back it will cover our right flank and will protect the WESTERN MARYLAND R. R.

(f) The 1st Observation Squadron will report all movements of the Red corps. Special attention will be paid to the disposition and movement of the Red cavalry. Messages regarding enemy cavalry will be dropped for the commander of the independent cavalry. 1st Observation Squadron will move to McKNIGHTSTOWN. An airdrome will be established in that vicinity.

(g) The 1st Engineers will be posted near farm house 400 yards southeast of RJ 612, CHAMBERSBURG ROAD. Two companies will be placed at the disposal of each brigade commander to assist in the organization of the position.

(x) 1. Not to exceed one battalion and one machine gun company will be placed in the outpost system of each brigade sector.

2. Each brigade will hold two machine gun companies in the reserve.

3. In case of general attack the main line of defense will be held.

4. Work on all defenses will be vigorously pushed and troops will be in their assigned positions by noon July 17.

5. Barrages will be laid covering outpost position.

6. Outposts will not be withdrawn without orders from these headquarters.

4. See administrative orders.
Station for Slightly Wounded: McKNIGHTSTOWN STATION.

5. (a) Plan of Signal Communication: no change.

(b) Axis of Signal Communication, division: CHAMBERSBURG ROAD.
1st Brigade: SEVEN STARS—RJ 555 (344.5—751.5)—RJ 587—RJ at hill 548.
2d Brigade: MUMMASBURG—RJ 625—J. FORNEY.

(c) Division Command Post will close at CASHTOWN at 10:00 AM 17 July and open at McKNIGHTSTOWN at the same hour.
2d echelon: ORRTANNA.
1st Brigade: SEVEN STARS.
2d Brigade: MUMMASBURG.
1st Field Artillery Brigade: McKNIGHTSTOWN.

A,
Maj Gen.

Distribution:

CG	1st Engrs
Div Staff	1st Obsn Sq
Ind Cav	1st MG Bn
Adv Cav	CO Tns
1st Brig	1st Corps (4 copies)
2d Brig	War Diary
1st FA Brig	APM

NOTE:—(2a) The line of resistance exceeds that considered normal for passive defense. Here it is justified by the knowledge that supporting troops will arrive before the division can become seriously engaged.

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(C) THE DEFENSE IN A MEETING ENGAGEMENT

Discussion of a Map Problem

CAPTAIN EMMETT ADDIS,
Cavalry

Maps: General Map, Gettysburg-Antietam, 1″=10 miles.
Pennsylvania and Maryland Geological Survey, 1:62500, Gettysburg, Emmitsburg, Taneytown and Mount Airy Quadrangles.

General Situation:

A Red invading army, based on Baltimore, has reached with advanced forces the general line Hanover Junction—Parrs Ridge.

A Blue army is advancing through South Mountain and Catoctin Mountains to repel the invader.

Special Situation (Blue):

The leading elements of the main forces of the Blue army will reach the eastern exits of the mountain passes during the evening of 28 November 19.

The 6th, 1st and 11th Blue Divisions, preceding the army, cleared the mountains late 27 November 19 at Cashtown, Emmitsburg and Thurmont respectively. On this same day the Blue army cavalry, which had been operating near Taneytown, moved south toward Frederick following Red cavalry. On 28 November the 6th, 1st and 11th Divisions marched east on Littlestown, Taneytown and Libertytown respectively in order to develop the hostile situation east of the Monocacy.

When Major General A, commanding the 1st Blue Division, reached Bridgeport at 10:00 AM, 28 November 19, he was aware of the following situation:

What appears to be four Red divisions are advancing west as follows:

1. On Hanover—Gettysburg road, leading elements at Brushtown at 9:00 AM.
2. On Taneytown Road, leading elements crossed Big Pipe Creek at 9:05 AM.
3. On Uniontown Road, leading elements cleared Uniontown at 9:30 AM.
4. On Liberty Turnpike, leading elements turned northwest on Liberty Road at Libertytown at 9:00 AM.

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The advance guard of the 6th Blue Division was passing through Gettysburg at 9:10 AM marching on Baltimore Turnpike. The advance guard of the 11th Division cleared the Monocacy River (left column at Millers Bridge) at 9:20 AM.

The situation of the 1st Division at 10:00 AM, 28 November 19 is as follows:

The 1st Squadron, 1st Cavalry (less Troop A), is at Galt Kump P. O. opposing a superior force of hostile cavalry. Troop A is at hill 561, east of Crabster, observing south and east. The division is marching in two columns, one via Emmitsburg—Bridgeport—Taneytown road and one via Fourpoints—342—433—Clearview School road. The advance party of the left column has encountered hostile infantry in increasing strength and is now attempting to hold the eastern exit of Taneytown. The point of the right column should be passing 478 road junction. At this time the division is disposed as follows:

Left Column	*Right Column*
Advance Guard:	Advance Guard:
1st Infantry (less 3d Battalion)	1st Battalion 3d Infantry
1st Battalion 1st Light Artillery	Company B 1st Engineers
Company A 2d Machine Gun Battalion	Company A 3d Machine Gun Battalion
Company A 1st Engineers	
4th Ambulance Company	
Between advance guard and main body:	
1st Field Signal Battalion	
Main Body:	Main Body:
(10:00 AM head at Bridgeport)	(10:00 AM head at road junction 433 east of Monocacy River)
Headquarters 1st Division (advanced echelon)	Headquarters 2d Bridgade
	3d Infantry (less 1st and 3d Battalions)
Headquarters 1st Brigade	
3d Battalion 1st Infantry	2d Light Artillery (less combat train)
1st Brigade Field Artillery (less 1st Battalion 1st Light Artillery. 2d Light Artillery, 3d Heavy Artillery and combat trains)	3d Machine Gun Battalion (less Company A)
	3d Battalion 3d Infantry
	Combat train 2d Light Artillery
2d Infantry	
2d Machine Gun Battalion (less Company A)	
4th Infantry	
3d Heavy Artillery (less combat train)	

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Left Column (continued):
1st Engineers (less Companies A and B)
Combat trains 1st Artil ery Brigade (less detachments)
1st Machine Gun Battalion
Combat train, 3d Heavy Artillery
4th Field Hospital Company

The 3d Field Hospital Company and 3d Ambulance Company are at Emmitsburg for service during the march.

The 1st Observation Squadron is operating from a field near St. Joseph Academy.

Trains:

Field trains of the division are parked near Liberty Mills.

Division trains (less elements of sanitary train before mentioned) are parked at Zora and south of Toms Creek west of Emmitsburg.

Required:

(1) General A's estimate of the situation.
(2) The formal field orders issued by General A.

NOTE:—The Monocacy is unfordable except as indicated on the map.

First Requirement:

MISSION

General A has been given a mission with two other division commanders to develop the hostile situation east of Monocacy. As the advanced elements of the Blue army will reach the eastern exits of the mountain passes during the evening of 28 November 19, and later will want room to maneuver and probably to advance, there is an implied mission of securing this debouching and the crossings of the Monocacy.

THE ENEMY'S FORCES

The enemy has four divisions. The two center ones affect General A most. The southern one may draw the northern column of the 11th Division to the south, leaving General A's right without its protection. The northern enemy division is too far away to interfere today.

The head of the Uniontown Road column at 10:00 AM should be in the vicinity of road junction 586. The head

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of the Taneytown Road division is opposing the advance party of the left column, 1st Division, in the vicinity of the eastern exit of Taneytown.

From the fact that the Reds are invading and have four divisions well forward, evidently expecting to stop the debouching of the Blue army, and that the advance party of the Taneytown Road column is increasing where opposed by the Blue advance guard, indicate aggressive action on the part of the Reds.

The Reds may decide to do the following:

1. Take a position on the high ground just east of Big Pipe Creek, leaving their advance guard to the west of Big Pipe Creek until the position has been occupied.
2. Take a position on the high ground just west of Big Pipe Creek.
3. Push forward and secure the high ground just east of the Monocacy.
4. Push forward and secure the crossings of the Monocacy by holding ground still farther to the west.

If the enemy decides on the first, he gives up his aggressive action, takes a position lower, except for a few places, than the one his advance guard is now on. His artillery fire cannot reach the crossings of the Monocacy. If he does this it is fortunate for General A. We may decide that he will not do this unless forced to do so.

If the enemy decides on the second, he gives up the offensive for the time being but secures a position from which to place artillery fire on the Monocacy crossings and thus interfere with any advance of the Blue army. The position can be prolonged to the south by his other divisions.

If the enemy decides on the third, he does not give up his aggressive action. If he succeeds, he partially covers the crossings of the Monocacy and can delay the Blue army with his artillery. He is in a good position to deploy under cover of the ridge 554—551, the ground and roads both to the north and south of the Taneytown Road are favorable. The Uniontown Road column can be used to help out the Taneytown Road column or against the 11th Division, but will be under fire from the artillery of the 1st and 11th Divisions. He cannot expect to cross the Monocacy today.

If the enemy decides on the fourth, he overcomes the disadvantage of partially covering the Monocacy crossings

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the farther west he goes and also places himself in a better position to stop the debouching of the Blue army.

General A may expect that the enemy will decide on the fourth and will push forward with vigor.

Our Own Forces

The 1st Division is disposed as given in the situation. It can expect no help from the 6th Division and probably none but artillery support from the 11th, as the Libertytown Road column will probably draw the northern column of the 11th Division to the help of the southern column. Troops from the army could arrive in trucks by evening.

General A has to make up his mind whether to act offensively or defensively, or both.

If he decides on the offensive, he must attack the Taneytown Road division, and drive it back across the Big Pipe Creek. In that case, he will probably find himself with the Uniontown Road column coming in on his flank any time after 12:00 o'clock. The farther eastward General A goes the more will this column become a menace.

If he decides to act on the defensive, he has the choice of two positions:

1. The high ground just west of the Monocacy.
2. The high ground just east of the Monocacy.

The first position can be taken up very readily and the Monocacy forms a very good obstacle which the enemy would have to force if he wanted to push farther west. This same obstacle should decide General A against taking the position in case the Blue army expects to act offensively.

The second position overcomes this objection and can be taken readily by the main bodies, using the advance guards as covering detachments to fight defensively but not becoming so engaged that the main bodies will have to go to their assistance. The position could be held until the army reinforcements arrived. Its serious disadvantage is that it allows the enemy to place his artillery so that it can fire on the Monocacy crossings. Of the two positions, it is the better.

If General A decides to act offensively and defensively, he has the high ground just west of the Big Pipe Creek on

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which the enemy advance party now is. The disadvantages are the same as in the offensive because the attack would probably go no farther today in the one than in the other. If this position is obtained and held, it prohibits hostile artillery fire on the Monocacy crossings. It affords good observation and obscures hostile observation of the Monocacy. It has good communications and can be connected with the 11th Division by the army. It is the best of the threee positions.

Here is a problem of a position to be held in front of the advance guard and with enemy now on it. It must be fought for and when obtained, secured defensively. To do this, the advance guard of the left column must take a vigorously aggressive action and push the enemy back off the position, while the main body deploys, pushes forward and drives the enemy off the position and then secures it. This requires that General A's main bodies deploy earlier than the enemy. The lack of Monocacy crossings gives the advantage to the enemy but General A's two-column march formation more than overcomes this.

The development should not be made until the direction is determined and that in turn requires an estimate of how much front of position can be held successfully if obtained. This must be wide to prevent a too easy envelopment by the enemy and at the same time strong enough to prevent a penetration.

With this in mind and because the position must be held until reinforcements arrive on the following day, it is believed that the extensive front from hill east of roadfork 554 to Crabster should be held and is justifiable in this case. This requires a direction parallel to the direction of march. Later it may be found necessary to extend the position from Crabster toward Keysville and the river by using reserves.

The advance guard of the left column in moving forward will be opposed by the Taneytown Road column and there will ensue a fight for the 554—551 ridge. Whichever side holds this ridge will have a position behind which its main body may deploy. The terrain favors a deployment of the hostile Taneytown Road column to the south of that road both on account of the number of roads and the shape of the 554—551—561—Crabster ridge. If the Uniontown

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Road column attacks the 1st Division, it may extend the Red line toward Crabster. The distance it will have to march is four or five miles which will require about two hours before its first troops arrive. To offset this the right column should be sent forward to seize that portion of the ridge which the Uniontown Road column might hold. The farthest point is two and one-half miles from its present position. Hill 561 is now held by Troop A, 1st Cavalry.

As the right column is the weaker in infantry the position should be divided so that it will hold the narrower sector. The dividing line can be road junction 402—hill north of hill 561, northeast of Crabster—Trevanion.

The 1st Brigade ought to be able to hold the northern sector. This will leave the rear infantry regiment (the 4th Infantry) as the divisional reserve.

If the Reds envelop General A's northern flank, he will want his reserves near that flank. This envelopment will be made by the Taneytown Road column and not by the Brushtown column as any movement by it to the south should be interrupted by the 6th Division. If the Uniontown Road column comes in on the southern flank, then the reserves should be placed nearer that flank. Of the two, the latter envelopment is more to be feared. A position in the vicinity of Piney Creek on the 441—507 road will answer. It has good roads to either flank.

More crossings of the Monocacy will be needed both on account of reinforcements and in case of withdrawal. The engineers should start them at once. The ground is suitable for two crossings south of the Bridgeport—Taneytown road and one north.

Decision

To hold the 554—551—561—Crabster ridge, sending the advance guard of the left column forward to drive the enemy back and to seize the ridge while the division deploys.

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Second Requirement:

If the orders were reduced to writing they would be as follows:

1st Div,
BRIDGEPORT,
28 Nov 19, 10:10 AM.

To
CG 2d Brig
CO Ad Gd Left Column
CG 1st Brig
CG 1st FA Brig

Maps: 1:62500, Taneytown quadrangle.

The leading elements of a hostile division moving west on TANEYTOWN ROAD are opposed to our left column just east of TANEYTOWN. Another Red division is moving west on UNIONTOWN ROAD, leading elements estimated about 2000 yards west of UNIONTOWN. 1st Sq 1st Cav (less Tr A) is at GALT—KUMP P. O. opposed by superior Red cavalry. Tr A is at hill 561, east of CRABSTER. Point of our right column estimated at 10:00 AM, at 478 south of CLEARVIEW SCHOOL.

The division deploys for the defense of 554—551—561—CRABSTER ridge. Direction of deployment—parallel to BRIDGEPORT—TANEYTOWN road.

The advance guard left column will seize and hold the ridge from hill 358.1—729.9 to the line hill 354.2—727.8 (exclusive)—TREVANION (inclusive) until further orders.

The right column will push forward and hold the ridge in extension to CRABSTER.

The remainder of the 1st LA will join its 1st Bn and support the advance guard of the left column.
It has priority on roads.

Division command post: BRIDGEPORT.

A,
Maj Gen.

1st Div,
BRIDGEPORT,
28 Nov 19, 11:00 AM.

FIELD ORDERS
No —

Maps: 1:62500, Taneytown, Emmitsburg Quadrangles.

1. The leading elements of a Red division marching west on the TANEYTOWN ROAD met the advance party of our left column just east of TANEYTOWN at 10:00 AM. The leading elements of another Red division cleared UNIONTOWN at 9:30 AM. The leading elements of two other Red divisions were at BRUSHTOWN and LIBERTYTOWN respectively, at 9:00 AM.

The advance guard of the 6th Blue Div was passing through GETTYSBURG at 9:10 AM, marching on the BALTIMORE TURNPIKE. The advance guard of the 11th Blue Div cleared the MONOCACY RIVER (left column at MILLERS BRIDGE) at 9:20 AM.

The point of our right column was estimated as passing road junction 478 at 10:00 AM.

1st Sq 1st Cav (less Tr A) was at GALT KUMP P. O. and Tr A at hill 561, east of CRABSTER, at 10:00 AM.

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2. This division will secure and hold the 554—551—561—CRABSTER ridge from hill 358.1—729.9 to CRABSTER. March conditions cease.

The line roadfork 402 (to north brigade)—hill 354.2—727.8 (to south brigade)—TREVANION (to north brigade) divides the sector into a north and a south brigade sector.

3. (a) (1) The 1st Brig will seize and hold the ridge in the north brigade sector. Prompt report of any attempt to envelop the northern flank is desired.

(2) The 2d Brig (less 4th Inf) will seize and hold the ridge in the south brigade sector. Special attention to the UNIONTOWN ROAD column.

(b) The 1st FA Brig will delay the enemy and cover the movement. Special attention to the BIG PIPE CREEK valley and to the UNIONTOWN ROAD column. The 1st LA will support the 1st Brig from the vicinity of TANEYTOWN and hill 354.1—730.2. The 2d LA will support the 2d Brig from the vicinity of RJ 507 (north of CRABSTER), road corner 445 and hill 354.2—727.8. The 3d HvA will be in general support. One battalion to vicinity of 2d LA, the remainder to vicinity of 1st LA.

(c) The 1st Obsn Sq will reconnoiter the TANEYTOWN ROAD division for movements in the BIG PIPE CREEK valley, reporting favorable targets to the artillery and hostile movements to division headquarters. The UNIONTOWN ROAD column will be watched and its first northern movement promptly reported. Thereafter its deployment will be observed.

All columns of these hostile divisions will be delayed by bombing and machine gun fire.

(d) (1) The 1st Sq 1st Cav (less Tr A) will protect our left flank and will reconnoiter the BIG PIPE CREEK valley for hostile movements to the north of the TANEYTOWN ROAD. Reconnaissance will be made to LITTLESTOWN and BRUSHTOWN for movements of BRUSHTOWN hostile column. Contact will be made with the 6th Div.

(2) Tr A 1st Cav will hold hill 561 until the arrival of the advance guard of the right column and will reconnoiter the UNIONTOWN ROAD column. Contact will be made with the 11th Division.

(e) Divisional Reserve:

The 4th Inf to woods vicinity 352.0—729.0.

The 1st MG Bn to woods vicinity 352.0—729.0 Route same as right column to 433, thence by 402—441 road.

(f) The 1st Engrs will build two wagon bridges over the MONOCACY south of BRIDGEPORT and one north.

4. See Administrative Order.

Station for slightly wounded: Vicinity of RJ 476, west of TANEYTOWN.

5. (a) Plan of signal communications: no change.

(b) Axes of signal communications:

Div: BRIDGEPORT—hill 351.6—731.1—TANEYTOWN.

1st Brig: Same as division.

2d Brig: BRIDGEPORT—CR 472—RJ 441—RJ 507.

(c) Command post:

Div: BRIDGEPORT.

1st Brig: TANEYTOWN.

2d Brig: Vicinity of road junction 507.

A

Major General

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Copies to:

CG	MP Co
Div Staff	1st Obsn Sq
1st Brig	1st Sq 1st Cav
2d Brig	Tr A 1st Cav
1st FA Brig	1st F Sig Bn
1st Engrs	Adv Gd
1st MG Bn	6th Div
4th Inf	11th Div
Tn Hq	Blue Army
Hq Tr	

Map Problem

LIEUTENANT COLONEL CHARLES M. BUNDEL,
Field Artillery

Maps: General Map, Gettysburg-Antietam, 1"=10 miles, and 1:21120, Gettysburg, Bonneauville, Emmitsburg, Taneytown, Kingsdale Sheets.

General Situation:

South Mountain forms the boundary between two small hostile states, Red west, Blue east.

Each state has an army of approximately 100,000 men and war has been recently declared.

The Reds are concentrating at Hagerstown and Waynesboro; one division is known to be at the latter place.

The Blues are concentrating at Harrisburg and Lancaster.

The Reds have sent forward by rail from Hagerstown to Thurmont a small force, estimated as a reinforced brigade, which has taken up a position near Emmitsburg along Middle Creek, covering Waynesboro—Emmitsburg Pass.

The Northern Central Railroad is double tracked between Lancaster and Frederick.

Special Situation (Blue):

In answer to a popular clamor that the Reds be driven out of Blue territory, the 1st Division, with the 1st Squadron, 1st Cavalry, was sent to Littlestown by rail, where it detrained by 1 June 1919, with orders to attack and destroy the Reds near Emmitsburg.

The 2d Division is due to begin detraining at Littlestown on the night of June 2-3.

The 3d Division is not yet completely concentrated.

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On June 1st the weather was foggy and aerial observation impracticable.

The Monocacy is fordable with difficulty south of Marsh Creek.

On the morning of June 2d the 1st Division, Major General A commanding, marched from Littlestown in two columns; the northern on the Littlestown—Shoemaker—588—Headgegrove—Clear Ridge farm road, and the southern on the Littlestown—Oakgrove S. H.—Harney road.

The 1st squadron, 1st Cavalry (less two platoons), was sent out as independent cavalry.

The columns were composed as follows:

Right (northern), Brigadier General B commanding, 2d Brigade, 2d Light Artillery, Company A, 1st Engineers, one-half 4th Ambulance Company and the 1st Machine Gun Battalion.

Left (southern), Division Headquarters, 1st Brigade, 1st Field Artillery Brigade (less 2d Light Artillery), 1st Engineers (less Company A) and one-half 4th Ambulance Company.

The 1st Field Signal Battalion marched between the advance guard and main body of the left column and maintained communication between the columns.

The trains were to await orders at Littlestown.

Each column had as advance guard one battalion of infantry and one platoon of cavalry.

General A rode forward to Koon farm house and at 10:20 AM received word from both advance guards that firing had been heard to the west.

At 10:30 AM he received the following message from his independent cavalry which was reconnoitering towards Thurmont, Emmitsburg and Orrtanna:

Ind Cav
Hill 728 one mile southeast of FAIRPLAY.
2 June 19, 9:45 A.M.

No 2
CG 1st Div

The two troops hostile cavalry retired toward FAIRPLAY. Much infantry movement in the vicinity of EMMITSBURG. Apparently an eastward movement. Will keep after Red cavalry. If forced to, will retire toward CENTENNIAL S. H. THURMONT patrol reports Red infantry detrained there early this morning. Strength not known. No report yet from ORRTANNA patrol.

Y Major.

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At the same time, 10:30 AM, a message was dropped at Harney by an airplane and relayed by local telephone:

Plane No 1,
2 June 19, 10:20 AM.

No 1

CG 1st Div

Long column of infantry and artillery moving east on the WAYNESBORO TURNPIKE, head of advance guard near ZORA, tail in WAYNESBORO. Estimated one division, Red force near EMMITSBURG is moving east, advance guard just west of CUMP'S MILL. About two troops hostile cavalry have halted just west of EMMITSBURG. Observation to south impossible account of fog.

Z Lt

At 10:30 AM, the head of the advance guard of the left column had reached crossroads 445 (1 mile west of Harney) and that of the right column had reached Clear Ridge Farm.

The 1st echelon of the division staff is with General A and the staff officers are familiar with the situation.

Required:

1. General A's decision (brief).

2. Any orders (as given) that General A may issue in the next twenty minutes.

3. General A's formal field orders. No annexes or administrative order required.

An Approved Solution

LIEUTENANT COLONEL CHARLES M. BUNDEL,
Field Artillery

First Requirement:

General A's decision.

To defend the line of the Monocacy River.

To accomplish this by placing part of his command in position near Harney, holding the remainder in readiness in rear to meet an attack from either flank.

To have the advance guards of the two columns cover the occupation of the position by delaying the advance of the Emmitsburg Reds west of the river.

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To place part of his artillery promptly in a position from which it can fire upon the approaching Emmitsburg Reds and delay them.

Second Requirement:

Orders issued by General A in the next 20 minutes.

At 10:40 AM to a staff officer:

"Direct the commander of the advance guard of this column to push forward to the vicinity of hills 487 and 484 and delay the Reds advancing from Emmitsburg. He is not to become heavily engaged and will retire on Harney. The division will defend the line of the Monocacy River. Orders will follow. Messages here."

At 10:42 AM to a staff officer:

"Report to General B at once, explain the situation to him and tell him he will hold the line from road junction 457, inclusive, to Harney, inclusive, with one regiment, the other not to advance west of Koon. His advance guard is to delay the Reds west of the river but not to become heavily engaged. March conditions now cease. Orders will follow. Messages here."

At 10:44 AM to a staff officer:

"Report to General C at once, explain the situation to him and tell him that he wi'l hold the line from Harney exclusive to road junction 491, inclusive, with one regiment, the other to be held near road junction 507. Explain to him the orders I have given the advance guard of the left column. March conditions now cease. Orders will follow. Messages here."

At 10:46 AM dictated, to be forwarded to the independent cavalry by motorcycle:

1st Division
KOON Farm House,
2 June 19, 10:46 AM.

CO Independent Cavalry

The division will defend the line of the MONOCACY. Delay the advance of the EMMITSBURG Reds. Retire on BRIDGEPORT leaving one troop to cover the right from the vicinity of BARLOW. Both advance guards have been ordered to delay the Reds west of the river. Orders will follow. Messages here.

A
Maj Gen

To General E, commanding the artillery brigade, who has been present and heard the messages read and the orders given:

"Have the artillery of the left column move forward rapidly by a side road to positions southeast of Harney and be prepared to assist the advance guards in delaying the advance of the Emmitsburg Reds."

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Third Requirement:

General A's formal field order:

1st Div,
KOON Farm House one-half mile NE of
HARNEY, MARYLAND,
2 June 19, 11:30 AM.

FIELD ORDERS }
No 2 }

Maps: 1:21120, Emmitsburg, Taneytown, Bonneauville, Kingsdale Sheets.

1. The Reds near EMMITSBURG have been reinforced by one division. Red infantry detrained at THURMONT this morning. Our 2d Div reaches LITTLESTOWN tonight.
2. This division will defend the line of the MONOCACY RIVER.
3. (a) The 2d Brig will hold the sector from road junction 457, inclusive, to HARNEY, inclusive, with one regiment.
   The other regiment will be held near KOON at my disposal.
   (b) The 1st Brig will hold the sector from HARNEY, exclusive, to road junction 491 with one regiment.
   The other regiment will be held at road junction 507 at my disposal.
   (c) 1. The 2d LA from a position south of HEADGEGROVE will support the 2d Brig.
   It will be prepared to cover the country north of its position.
   2. The 1st LA from a position southeast of HARNEY will support the 1st Brig. It will be prepared to cover the country south of its position.
   3. The 3d HvA from positions near roadfork 435 will support both brigades.
   4. All artillery units will be prepared to fire in adjacent sectors.
   (d) The forces now constituting the advance guards of the two columns, under the orders of their respective brigade commanders, will delay the Reds west of the MONOCACY RIVER, retiring on the division.
   (e) The independent cavalry will continue its reconnaissance and will assist in delaying the Reds west of the MONOCACY RIVER. When forced to retire it will move to BRIDGEPORT and cover the left flank, sending one troop to BARLOW to cover the right flank.
   (f) The 1st Obsn Sq will keep under constant observation the HARNEY—EMMITSBURG road, the EMMITSBURG—THURMONT road and the main roads towards ORRTANNA. Half-hourly reports will be made.
   (g) The 1st MG Bn will constitute the division reserve and will await orders at KOON (See pars 3-a and 3-b.)
   (h) One bn 1st Engrs will report at once to each brigade to assist in organizing the position.
   (i) The 1st F Sig Bn will establish communications between the division command posts, the two infantry brigades, the artillery, the cavalry and the reserves.
   (x) The position through HARNEY will be entrenched.
   Reconnaissance of suitable positions on the flanks will be made at once by each brigade.
4. (a) Station for slightly wounded: road junction 483.
   (b) The Am Tn, Sn Tn and Engr Tn are released.
   The remainder of trains will await orders at LITTLESTOWN.
   (For details see Administrative Orders No —.)

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5. (a) Axes of signal communications.
Div: KOON—HARNEY road.
1st Brig: KOON—PINEY CREEK CHURCH road.
2d Brig: KOON—roadfork 522—farm road—HEADGEGROVE road.
(b) Command posts.
Div: KOON farm house.
1st Brig: PINEY CREEK CHURCH.
2d Brig: HEADGEGROVE.

A
Maj Gen

Copies to:
CG 2d Div
1st Brig
2d Brig
1st FA Brig
Div Staff.
Co 1st Engrs
1st Obsn Sq
1st Sq 1st Cav
1st MG Bn
1st F Sig Bn
Tns

COMMENT ON SOLUTION TO MAP PROBLEM

There is little to gain and much to lose in taking up a defensive position west of the river. Nothing in General A's mission or in the situation demands a bridgehead on the Monocacy. The 1st Division was sent forward in answer to a "popular clamor" and not as a strictly military necessity.

If General A cannot stop the Red invasion by blocking the mountain pass, and apparently he cannot, it does not appear that he betters the situation by crossing the river, as the Reds already have the advantage of the Blues.

The position through hills 728, 487 and 484 to the river has its right "in the air" and is exposed to an envelopment from the north by the Waynesboro Reds. A position farther west is open to the same objection, as well as having its left exposed to attack from the south. Both are dominated by the hills west of Emmitsburg.

Both positions, especially the eastern one, are faulty in that the Monocacy is too close in rear. In case of defeat this might mean disaster.

The 2d Division, which begins detraining at Littlestown tonight, can render little, if any assistance before late tomorrow afternoon. It must detrain (a long operation in the case of a division), reorganize its units and march from 10 to 12 miles before it is in position to assist the 1st Division.

If the Reds are sending a strong force by way of Thurmont (which is not at all improbable) General A would

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find himself tomorrow morning in a faulty position, opposed by about twice his strength and with no help possible until late in the afternoon. A reverse in this territory would force him back on the river and on the 2d Division. The 2d Division might be employed to cover General A's retirement from a position on the east bank of the river. Then, doubtless, the two divisions could stop the Reds. However, if this situation develops (and it is very apt to if General A crosses the river) the Blues have gained nothing that they would not have obtained by holding the river line in the first place and they have exposed one-half of their force to defeat and a forced retirement.

The consequences of a decisive defeat of the 1st Division in all probability would be very far reaching. With the 1st Division out of the way, there is nothing but the 2d Division to oppose an invasion by about two Red divisions. As the Blue military strength is but about three divisions, such a defeat at this time (with the 3d Division not yet concentrated) might prove the turning point in the war.

A position on the east bank of the river gives up the river crossings, but this is not such a serious matter when the whole Blue situation is considered. The Reds already have the "jump" on the Blues, who are practically forced to take up the defensive, temporarily at least. The Monocacy ceases to be much of an obstacle north of Marsh Creek, hence any western advance by the Blues is restricted only south of that creek.

It therefore appears better for the Blues to "play safe" at this stage of the operations, especially as the Red situation and strength are still undetermined.

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(D) DEFENSIVE ZONE

Captain Fay W. Brabson, Infantry ------Organization of a Defensive Sector by a Division.
Captain W. C. Short, Infantry ----------Machine Guns in a Defensive Sector.
Lieut. Col. C. H. Lanza, Field Artillery --The Artillery in a Defensive Sector.
Lieut Col. M. A. W. Shockley, Medical CorpsThe Sanitary Service in a Defensive Sector
Major P. D. Glassford, Field Artillery ----Administrative Orders of a Defensive Sector.
Captain O. S. Albright, Signal Corps --Signal Communications.

EDITOR'S NOTE: Six officers have collaborated on the discussion of a Division in a Defensive Zone, which opens with the presentation of a concrete situation. In the discussion that follows the tactical principles and decisions involved are discussed and illustrated.

Organization of a Defensive Sector by a Division

CAPTAIN FAY W. BRABSON,
Infantry

Maps: Gettysburg-Antietam General Map, 1"=10 miles, Pennsylvania and Maryland Geological Survey, 1:62500, Quadrangles about Gettysburg. Gettysburg-Antietam, 1:21120, Kingsdale, Taneytown and Emmitsburg Sheets.

An outline map (marked Chapter VI-D, Organization of a Defensive Sector) to assist the student in locating the defensive lines, is in the map pocket.

General Situation:

A Blue nation has declared war on the allied states of Maryland and Pennsylvania (Red), and, having landed an invading army at Baltimore, has driven elements of the 1st Red Army, superior in strength but poorly trained, back toward the Monocacy River.

The Red defense of the Monocacy River has been stubborn and troops are everywhere in contact on that line. The bridges over the Monocacy were left intact.

Special Situation (Blue):

The 1st Blue Army on 2 June 20, is holding the line of the Monocacy River. All senior commanders are familiar with the general location of the troops.

By noon 2 June 20, Major General A, commanding the 1st Blue Division, 1st Corps, at Taneytown, received a corps field order, extracts of which are as follows:

1. The 1st Red Army has been driven west of the MONOCACY, leaving the bridges over that river intact.

   Our army will halt on the general line of the MONOCACY and organize a defensive zone on the general line ROCKY GROVE SCHOOL —TWO TAVERNS—LONGVILLE—MOUNT ZION CHURCH—WOODSBORO.

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2. This corps organizes a defensive zone as follows:
   (a) Zone of defense.
   North boundary: UNION MILLS—MARKER'S MILL—BM 494—LONGVILLE (all inclusive).
   South boundary: WESTERN CHAPEL—NEW WINDSOR—UNION BRIDGE—MOUNT ZION CHURCH—MILLERS BRIDGE (all inclusive).
   East boundary: EBBVALE—PARRS RIDGE.
   (b) Positions.
   An outpost position with line of resistance on the general line: 351.8—733.0—MOUNTAIN VIEW FARM—hill 503—hill 483—RJ 433—hill at 347.8—727.5.
   A battle position with line of resistance on the general line: LONGVILLE (inclusive)—hill 532—hill 524—350.5—729.7—hill 483—348.6—728.5—hill 524—ridge one-half mile west of MOUNT ZION CHURCH.
   An intermediate position with line of resistance on general line: hill 588—hill 587—TANEYTOWN—RJ 561—hill 540—MIDDLEBURG.
   A switch position (within corps sector) with line of resistance on the general line: CENTENNIAL—hill 607—hill 627—hill 621—hill 662—hill 587—hill 567—LONGVILLE—hill 532.
   A second position with line of resistance on the general line: MARKER'S MILL—hill 584—WEISHAARS MILL—ridge west of LINWOOD.
   (c) Sectors.
   TANEYTOWN.
   Northern boundary: Same as northern boundary 1st Corps.
   Southern boundary: SHADES SCHOOL—TREVANION—CRABSTER—RJ 498—RJ 489—STULL (all inclusive).
   Eastern boundary: 362.5—730.0—BIG PIPE CREEK—359.3—727.7.
   KEYMAR:
   Northern boundary: Same as south boundary TANEYTOWN sector.
   Southern boundary: Same as south boundary 1st Corps.
   Eastern boundary: 359.3—727.7—BIG PIPE CREEK—TREVANION (inclusive).

3. (a) 1. 1st Div will organize and defend the Taneytown sector. It will co-operate with the 2d Corps in selecting and organizing the switch position. It will relieve elements of 3d Div in its sector by 9:00 PM 2 June 20.
   2. 2d Div will organize and defend the KEYMAR sector. It will relieve elements of 3d Div in its sector by 9:00 PM 2 June 20.
   3. The 3d Div is relieved from front line duty at 9:00 PM 2 June 20 to assemble in MAYBERRY area.
   (b) Group A Corps Arty (1 bn 4.7 guns and 1 bn 6" guns) will support the 1st Div.
   Division commanders will place their light artillery so as to cover the line of the MONOCACY RIVER. (See Artillery Annex.)
   (c) The 4th Div (Corps Reserve) camping at UNIONTOWN, will organize the second position.
   (x) Conduct of Defense.
   1. The mission of the outpost position is to deny the ground included therein, to any but general attacks. *Aggressive reconnaissance west of the* MONOCACY will be maintained.
   The battle position will be held and all forces will be employed for that purpose.
   The intermediate position will protect the artillery in the event of a penetration of the battle position.

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The second position will not be used except on orders from these headquarters.

The switch position will form the line of departure for counter-attacks and insures continuity of defense in case of penetration.

2. Front line divisions will deploy their troops for the defense of the battle position sending forward sufficient troops to defend the outpost position against raids and local attacks. Reserves will be held out for the defense of the intermediate position, to check possible hostile penetrations and to protect the artillery.

   Connecting groups consisting of at least one section of infantry and one machine gun section will be organized to maintain connection with similar groups of 8th Div on the north at 351.8—733.0, at LONGVILLE and at crossroads 571 (intermediate position); and with 14th Div on the south at ————.

3. In case of a surprise attack all troops will fight to the last without yielding ground. In case of a foreseen attack the battle position will be held at all costs and troops in the outpost position will be withdrawn only on orders from these headquarters.

   In case of alarm, corps reserve and corps troops having no assigned function, will hold themselves in readiness in present positions.

4. In case of a serious hostile offensive, counter-attacks will be launched into the outpost position from the battle position only if the enemy has been definitely checked in front of the latter. Orders for such counter-attacks must come from the commanders of brigades, divisions or corps according to the front involved.

   In case of a local attack or raid counter-attacks, they will be launched from the zone of resistance involved to retake ground lost in the outpost position.

5. The positions will be organized in the following order of priority:

   First, outpost and battle position at same time; second, intermediate and switch positions at same time; third, communications between above positions.

4. See Administrative Order.

5. (a) Plan of Signal Communications: No change.

   (b) Axes of Signal Communications:

   2d Corps: EBBVALE—UNION MILLS—LITTLESTOWN—TWO TAVERNS.
   8th Div: KINGSDALE—OAK GROVE SCHOOL—TRUSTLE—J. SMITH—BARLOW.
   1st Corps: WESTMINSTER—TANEYTOWN—BRIDGEPORT.
   1st Div: STUMPTOWN—TANEYTOWN—BOYD.
   2d Div: MT. UNION CHURCH—BRUCEVILLE—KEYESVILLE.
   4th Div: Same as 2d Div.

   (c) Command Posts.

   2d Corps: EBBVALE.
   1st Corps: WESTMINSTER.
   8th Div: KINGSDALE.
   1st Div: STUMPTOWN.
   2d Div: MT. UNION CHURCH.
   4th Div: UNIONTOWN.

* * * * * * *

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Required:

The formal orders issued by Major General A, commanding 1st Division, 1st Blue Army Corps.

1st Division,
STUMPTOWN, PA.,
2 June 20, 6:00 PM.

FIELD ORDERS
No 7

Maps: 1:62500, Taneytown and Emmitsburg Quadrangles.
1:21120, Kingsdale, Taneytown and Emmitsburg Sheets.

1. The enemy has been forced across the MONOCACY RIVER. Our advance elements are in contact with the enemy at the river crossings. Our army halts on the general line of the MONOCACY RIVER.

Our corps, holding the line of the MONOCACY, defends the general line—LONGVILLE (inclusive)—hill 526—hill 532—hill 483—hill 524—ridge one-half mile west of MOUNT ZION CHURCH.

No change in corps boundaries.

2. (a) This division will organize and defend the TANEYTOWN sector.

Northern boundary: Same as northern boundary 1st Corps.

Southern boundary: SHADES SCHOOL—TREVANION—CRABSTER—RJ 498—RJ 489—STULL (all inclusive).

Eastern boundary: BIG PIPE CREEK.

(b) Positions:

An outpost position with its line of resistance: 351.8—733.0; 351.4—732.4;—MOUNTAIN VIEW FARM—hill 503—hill 483—RJ 433—hill 427—hill at 347.8—727.5.

A battle position with its line of resistance on the line: LONGVILLE (inclusive)—hill 526—hill 532—hill 524—350.5-729.7; hill 483—348.6-728.5; RJ 489—hill 524; with the regimental reserve line along 355.8—732.4; 354.1—731.1; 353.6—730.1; 352.3—728.2; CLEAR VIEW S. H.—351.0-726.5.

An intermediate position with the main line of resistance hill 588—hill 587—TANEYTOWN—hill 561—hill 540.

A switch position along the line: hill 567—LONGVILLE—hill 532.

(c) Brigade sectors are designated:

North brigade sector.

South brigade sector.

Boundary line between brigade sectors: PLEASANT VALLEY—BEAR MOUNT SCHOOL—MAYBERRY—STUMPTOWN—hill 561—hill 521—TANEYTOWN—farm at 352.5—729.5; road junction 456—349.4-730.6 (all inclusive to north brigade sector).

3. (a) 1. The 1st Brig with 1 co 1st Engrs attached will organize and defend the north brigade sector.

The commander of the north brigade sector will co-operate with the 8th Div, 2d Corps on the north in selecting and laying out a switch position on the general line: hill 532—LONGVILLE—hill 567—hill 587.

2. The 2d Brigade with 1 co 1st Engrs attached will organize and defend the south brigade sector; infantry regiments will be placed abreast.

3. There will be in the outpost position of each brigade sector not to exceed the equivalent of a battalion of infantry.

4. Each brigade will organize two centers of resistance on the battle position.

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5. Each infantry brigade commander will locate one infantry battalion in each brigade sector in such place as best to defend the intermediate position in case of emergency.

All of these troops will be employed in organizing the battle position. When this position has been completed these troops will be employed on the intermediate position.

(b) Infantry brigade commanders will employ in the outpost position the minimum number of machine guns necessary to assure local protection. These machine guns also will be prepared to concentrate their fire on river crossings.

The bulk of all machine guns will be placed so as to put down an effective barrage in front of the firing line of the battle position.

The division machine gun officer, by arrangement with the division on the north, will assure the covering by machine gun fire of the river salient opposite PINE HILL MILL.

The 1st MG Bn will retain station at STUMPTOWN. After reconnaissance, machine gun positions will be prepared for the guns of this battalion on the intermediate position and in the battle position. (See Machine Gun Annex.)

(c) The 1st FA Brig will support the sector; 1st LA, north brigade sector; 2d LA, south brigade sector; guns for direct fire on hostile tanks will be provided.

Group A, corps artillery will support the 1st Div. (See Artillery Annex.)

(d) The 3d Bn 1st Inf, the 3d Bn 4th Inf, Co A, 2d MG Bn, Co A, 3d MG Bn and the 1st MG Bn will constitute the divisional reserves. These troops will be quartered as follows:

3d Bn 1st Inf and Co A 2d MG Bn near point 358.7—729.8.
3d Bn 4th Inf and Co A 3d MG Bn near point 357.0—727.0.
1st MG Bn at STUMPTOWN.

Troops stationed on or in rear of the intermediate position will continue training. When alerted the divisional reserves will assemble in their camps ready to move.

(e) The 1st Obsn Sq from the landing field at STUMPTOWN, will make reconnaissance daily during the hours of daylight of enemy positions opposite our front to a depth of five miles. Friendly front lines will be staked out twice daily upon call of airplane, at daybreak and just before sunset. (See Air Service Plan.) Planes will be placed at the disposal of the artillery on call.

(f) The Div Engr O after consultation with the brigade sector commanders will insure in each brigade sector a minimum of four footbridges and two wagon-bridges across PINEY CREEK.

The 1st Engrs will construct removable obstacles for all fords of the MONOCACY and will prepare for demolition all bridges across that river.

(x) Conduct of the Defense.

1. The outpost position will deny to the enemy any foothold east of the MONOCACY RIVER Aggressive and strong reconnaissance will be made west of the MONOCACY. The outpost position will be held against any attacks unless orders are issued for withdrawal by division headquarters. In case of a foreseen general attack the outpost troops will be withdrawn to the battle position by orders from division headquarters. In case of any other class of attack all troops will fight in their present positions to the last without yielding ground. There will be no withdrawal of any character.

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The battle position will be held at all hazards, under any circumstances. The reserves will be held mobile and will be used in counter-attacks and to maintain the line of resistance, battle position.

The intermediate position covers the artillery and forms the base of departure for counter-attacks by the main reserves.

The switch position will be used for the purpose of preventing any hostile break through on our right.

2. In the event of a foreseen general attack, the division reserves will be assembled in alert positions ready to move.
3. Through the employment of connecting groups regimental subsector commanders will insure mutual support between adjacent centers of resistance within the division sector.

   The commander of the north brigade sector will organize connecting groups to consist of at least one section of infantry and one machine gun section which will maintain connection with similar groups of the 8th Div on the north at 351.8—733.0, at LONGVILLE and at CR 571, intermediate position.

   The commander of the south brigade sector will arrange with commander of the 2d Div on the south to establish similar groups to be located at hill 347.8—727.5 at hill 524 and at point 351.0—726.7.
4. Counter-attacks will be launched by battalion and higher commanders to insure possession of the battle position.
5. Barrages by machine guns and artillery within the outpost position and between the outpost and battle positions will be arranged and laid down on call of proper commanders.
6. The switch position will be outlined but not completed until further orders. (See plan of organization of the ground, omitted.)

4. See Administrative Orders.
   Station for Slightly Wounded: OREGON S. H.
5. (a) See plan of Signal Communications (omitted).
   (b) Axes of Signal Communications:
   1st Div—STUMPTOWN—TANEYTOWN—BOYD (forward communication center at TANEYTOWN).
   1st Brig: 354.8—730.4, 354.8—730.7, 352.8—731.2.
   2d Brig: 354.2—728.2, RJ 471—445—352.3-728.2—RJ 441.
   (c) Command Posts:
   1st Div: STUMPTOWN.
   1st Brig: Farm house at 354.8—730.4.
   2d Brig: Farm house at 354.2—728.2.

A
Maj Gen

Distribution:

CG	2d Brig
Div Staff	1st FA Brig
1st Engrs	1st Army
1st MG Bn	1st Corps
1st F Sig Bn	2d Corps
CO Tns	8th Div
CO Group A Corps Arty	2d Div
1st Brig	4th Div

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Discussion

Mission

The 1st Blue Army has driven a superior Red force westward across the Monocacy River. Certain troops are withdrawn from the Blue army which thereupon determines to organize a defensive zone. The single line to be defended is laid down by the army and defined in more detail by the corps which further assigned to the 1st Division the task of organizing and defending the Taneytown sector.

Enemy's Force

The enemy is superior in strength to the 1st Blue Army but poorly trained. He is in contact with the Blue forces along the Monocacy River. The Red defensive along the Monocacy has been stubborn which would indicate an improvement in morale after a forced retirement.

Generally parallel to the Monocacy River and 5 to 10 miles west are the South Mountains. This mountain range is about 8 miles wide and the roads through it are generally far apart and not metalled. The road communications generally are uncertain. The Reds have their back to this mountain range and evidently intend to prevent the Blues from crossing the Monocacy. The bridges over the Monocacy were left intact when the Reds retreated. This would indicate an intention to make an active defensive and await a favorable opportunity or the arrival of other forces to launch a counter-offensive. If the armies oppose each other long in this position, these bridges will soon be destroyed by artillery from one side or the other. Had the retreat been precipitate the enemy might not have had time to destroy the bridges. Then the artillery would promptly destroy them if the Reds desired it. The Reds have a preponderance of artillery but probably not sufficient to require the Blues to occupy the reverse slope of the ridge east of the Monocacy.

Our Own Force

Looked upon strategically, this is a defensive position in which the enemy is met by a portion of our forces until the remainder is concentrated and ready to operate elsewhere.

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The problem being that of a division as part of a corps in defense, the frontage occupied can be extended because the flanks are protected. Nevertheless, it is essential that communications be maintained with troops on these flanks. This work has been ordered through connecting groups at important points. The division reserves are held back for use in local counter-attacks of importance.

The 1st Blue Army is on the active defensive; it is temporarily thrown on the defensive. The arrival of fresh troops or the success of the Blue force at another place may turn the tide. The Blue army has been depleted to such an extent that the pursuit mission has been changed to a halt and organization of a defensive zone. The 1st Corps has indicated to the 1st Division the position to be held, the general method of occupation, strength of outpost system and location of intermediate and switch positions.

The corps has prescribed that each division locate four infantry battalions and two machine gun companies in the vicinity of the intermediate position.

As far as the 1st Division is concerned, the designation of the switch position merely means that a toehold within the 1st Corps area is held by this position and that arrangement with the division to the north is necessary. This line will follow the contour generally parallel to Alloway Creek.

Our corps is laying out a second position to be held by the 4th Division. This position is about 7,000 to 10,000 yards in rear of the line of resistance of the battle position.

For a large force that has taken up a defensive position along the bank of a river the line of resistance would generally be coincident with the outpost line and the outpost position would be merged into the battle position. Here if the line of resistance, battle position, had been pushed forward to the first slope east of the Monocacy River (approximately the present line of resistance, outpost position), then the outpost troops would consist of groups pushed forward to within a few hundred yards of the river. Along parts of the front the line of resistance, battle position (firing line), would perform the functions now carried out normally by outpost troops.

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Had this line of resistance of the battle position, as assigned by corps and army, been in advance of the line of contact with the enemy, the Blue division would have been forced to attack to secure it and to drive the enemy back a sufficient distance to permit its organization for defense.

Here the line selected was 1000 or 2000 yards in rear of the line of contact with the enemy along the Monocacy. Accordingly this area will be organized and held as an outpost position.

Having become stationary after an advance, the troops are everywhere in contact with the enemy and their front line will be occupied with considerable density due to the concentration necessary for delivering or resisting the attack just completed. The greater part of these troops must be withdrawn to the battle position and utilized in its organization.

Our Force—Terrain

The east bank of the Monocacy is fringed with trees along most of its length. In the north brigade sector this belt of woods is generally 100 to 200 yards wide. The ravines are wooded to a greater distance from the river.

The line of resistance of the outpost position is at the head of these ravines. At the heads the ravines are generally free from woods. The observation is good. Similarly the line of resistance, battle position, is on commanding ground and the woods do not interfere with observation or physical construction of the position. The organization of the battle position consequently will be simple and easy. An attacking force that should overrun the outpost position will find little cover for working forward to an assaulting position against the battle position.

Terrestrial observation is an essential for infantry, machine guns and artillery. The ground here is unusually favorable. It would be a good plan to select at least three divisional posts covering the hostile first position, "no man's land," and the territory between our own positions included in the divisional sector. From one or more of these points, the entire area concerned would be under constant observation. Such points might be located at Longville, at hill 524 and at hill at 347.9—727.5. These points are farther to the

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front than desirable, but the best is made of the situation. These points would be connected by telephone with division headquarters. Direct lines, while difficult to maintain, would be used if practicable.

Plans of Action

The 1st Corps has prescribed that the 1st Division shall not employ to exceed the equivalent of two battalions in the outpost position. It has given the general line of resistance of the outpost position.

The 1st Corps also gives the line of resistance of the battle position. It may be asked here why this line was not nearer the river; say where the line of resistance of the outpost position is. The answer is that the line of resistance of the battle position is stronger—more commanding. Further forward the wooded ravines would break the continuity of the firing line.

By holding the outpost position where located, the enemy will be under constant observation and at the same time the force occupying this position can offer much hindrance to a Red effort to gain a foothold on the eastern slope of the Monocacy River valley. Furthermore, the Blue defense may be in greater depth; a distinct advantage here with the Reds in superior force holding commanding ground and having a superior amount of artillery.

The line was assigned by the army which no doubt from a broad view had some special reason for not holding the line of defense closer to the Monocacy.

The higher commanders having decided so much in giving the general lines and in a measure prescribed the strength to occupy them, the division commander is concerned largely with locating his lines more in detail; deciding how to garrison the outpost position; how to distribute the troops within the battle position and where to locate the reserves.

Decision

The division commander decides to divide his sector into two brigade sectors of approximately the same width; to hold strong reserves on the regimental reserve line; to prescribe general locations for brigade sector reserves near

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the intermediate position; and to hold the division reserves well back and in two parts because of the width of the sector.

One company of engineers is placed at the disposal of each brigade sector commander. The bulk of the engineers are held for common work in the sector.

The machine gun battalion (motorized) is held well to the rear but it is given the task of selecting positions well forward and preparing them.

One regiment of light artillery is placed in support of each brigade sector; the heavy regiment of artillery is held under the orders of the divisional artillery commander.

Detailed Discussion

The Monocacy River offers such a serious obstacle that it will be difficult for the Reds to force a crossing in the face of fire from the outpost position plus some fire from the line of resistance, battle position. Due to its commanding position and proximity, the line of resistance, battle position, can assist in part of its length in defending the line of resistance, outpost position, by small arms fire and machine gun fire.

The obstacle offered by the Monocacy River will probably deter the Reds from making any attack except a well planned raid or general attack. The latter will no doubt be launched during daylight. Accordingly, our outpost position can be held lightly, largely by observation troops on the high ground in daytime and by more numerous patrols, observation groups and combat groups close to the river at night. The patrols ordered west of the Monocacy will assist in retaining contact with the enemy.

The order for organizing a defensive zone comes in time to permit a reconnaissance during daylight before issuing the division order. The command has fought over the terrain and will be more or less familiar with its general aspect, nevertheless a general reconnaissance based on the map furnished by the corps will be made in the time available, noting particularly the hills, ridges, woods, villages and natural obstacles with relation to adapting them to the general scheme of defense. This reconnaissance should in-

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clude an examination of the disposition made in adjacent sectors. An officer from the artillery and the division machine gun officer should take part in this first general reconnaissance, which determines the general distribution of the troops. A second reconnaissance determines the exact location of works. The amount of time available, and the extent of hostile observation and fire will determine how much of these formal reconnaissances can be made on the ground during daylight.

The position is taken up in the open, consequently there is no refinement of detail in the field orders. The division is in occupation of a narrower front than might occur in a purely stabilized situation. In open warfare we must have a more or less continuous line; later on, when stabilized, gaps are permissible when they can be covered by fire from favorable locations on the flanks. In a stabilized situation the line is made continuous by fire. The division goes more into detail in giving the general line composing the different positions. In fact the initiative of the subordinate is somewhat eliminated in a semi-stabilized situation.

In this order each brigade is given two centers of resistance on the battle position. By stating that the equivalent of not to exceed two battalions of infantry will be employed in the outpost position it is intended that the outpost troops guarding each center of resistance should not be composed of tactical battalions but should be small or tactical elements drawn respectively from the battalions occupying the centers of resistance on the battle position. The troops of the outpost position will be separated considerably from the battalions occupying the respective centers of resistance. This arrangement, however, preserves tactical unity and in case of counter-attack would be advantageous. As laid out, regimental subsector commanders will command all the troops in respective strips of territory all the way from the river straight to the east boundary of the sector. Where the troops composing a sector are scattered widely as they are here it is necessary that division headquarters go into detail as to the general allotment of the elements of the command. If the division stays in sector for some time, the final arrangements by brigade sector and regimental subsector commanders will be shown in such detail that the

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tendency will be for division headquarters to state more and more in detail what smaller elements will do in all contingencies.

Were it not for corps orders the line of resistance on the battle position might well have three battalion centers of resistance in each brigade sector. The disposition of troops might be, one company from each of these three battalions in the outpost, two companies from each of these three battalions, on the firing line and support line and one company from each of these three battalions, on the battalion reserve line. In this problem, tactical control, evacuation and supply favor occupation by two centers of resistance in each brigade sector, and the fact that the front allotted is unusually wide for a semi-stabilized position is counter-balanced in a measure by the enemy having to cross the Monocacy River to gain a foothold on our teritory. Furthermore, the line of regimental reserves is strongly held.

The lines are not rigid. It is seen that the line of resistance, outpost position, and line of resistance, battle position, coincide along the ridge, hill 483 to road junction 433. The configuration of the ground favors this solution. A less advantageous solution would put the line of resistance, battle position, along the line 441—350.2-728.5—hill 506. This line would be rather far distant from the Monocacy River and in addition would cross Piney Creek at a less desirable angle. Here large mobile reserves are held in the regimental reserve line to make local counter-attacks.

In the active defense, heavy reserves well to the rear should always be held out. In a long battle line, heavy reserves for interior divisions are not always so necessary as would seem to be the case at first. In this particular situation, we are dealing with an extensive front and the reserves are accordingly held back so as not to become involved in local raids, but that they might be launched in the proper direction for important counter-attacks.

The division has located the brigade sector reserve close to the intermediate position. The troops in reserve are placed under cover and they are near roads from which they can easily form on the intermediate position or go forward to any part of the division sector.

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The intermediate position is on the ridge east of Piney Creek generally parallel to it and about 1½ miles distant. The question comes up whether a straight line farther east excluding Taneytown, say through hill 564—hill 561 would be better. The line including Taneytown was decided upon as that town is on a hill and could be organized strongly for defense. The road system in rear of the intermediate position, both laterally and axially, will make artillery supply easy.

The intermediate position is so far from certain bends of the Monocacy River that it will be necessary for part of the light guns of the artillery to have emplacements in front of the intermediate position so as to carry out the corps directions that the bulk of the light guns must be placed so that they can put down a protective barrage in the outpost position.

The corps has directed that the divisional artillery be echeloned in depth. This disposition of the artillery will not seriously affect the supply of ammunition and will give the enemy greater difficulty in locating the guns in defense. Consider the case of a break-through, and the advantages of judiciously disposing the artillery in depth are obvious.

In disposing the troops and deciding on regimental subsector lines, much has been left here to the brigade sector commanders. A later conference will assume the dispositions they have made and they will be discussed in detail.

NOTE:—The natural obstacle presented by the Monocacy River and the state of training of Red forces justify the extended frontage occupied.

Machine Guns in a Defensive Sector

CAPTAIN WALTER C. SHORT,
Infantry

Annex No 1 to Field Order No 7, 1st Division, 2 June 1920.

MACHINE GUNS

1st Div,
STUMPTOWN, PA.,
2 June 20, 6:00 PM.

Maps: 1:62500, Taneytown and Emmitsburg Quadrangles.
1:21120, Kingsdale, Taneytown and Emmitsburg Sheets.

1. The enemy has been forced across the MONOCACY RIVER. Our advance elements are in contact with the enemy at the river crossings. Our army halts on the general line of the MONOCACY.

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Our corps, holding the line of the MONOCACY, defends the general line: LONGVILLE (inclusive)—hill 526—hill 532—hill 483—hill 524—ridge one-half mile west of MOUNT ZION CHURCH.

Our division organizes and defends the TANEYTOWN sector.

Northern boundary of division sector: MARKER'S MILL—B. M. 494—LONGVILLE—ALLOWAY CREEK (all inclusive).

Southern boundary of division sector: SHADES SCHOOL—TREVANION—CRABSTER—RJ 498—RJ 489—STULL (all inclusive).

Boundary between brigade sectors: PLEASANT VALLEY—BEAR MOUNT SCHOOL—MAYBERRY—STUMPTOWN—hill 561—TANEYTOWN—farm at 352.5—729.5; 349.4—730.6, all included in north brigade sector.

North brigade sector: 1st Brig. Organizes two centers of resistance.

South brigade sector: 2d Brig. Organizes two centers of resistance.

POSITIONS.

Outpost Position.

Line of resistance: 351.8—733.0, 351.4—732.4—MOUNTAIN VIEW FARM—hill 503—hill 483—RJ 433—hill 427—hill at 347.8—727.5.

Battle Position.

Line of resistance: LONGVILLE (inclusive)—hill 526—hill 532—hill 524—350.5—729.7; hill 483; 348.6—728.5—RJ 489—hill 524.

Regimental reserve line: 355.8—732.4, 354.4—731.1, 353.6—730.1, 352.3—728.2—CLEAR VIEW S. H.—351.0—726.5.

Intermediate position: hill 588—hill 587—TANEYTOWN—hill 561—hill 540.

Switch position: hill 567—LONGVILLE—hill 532.

2. The machine guns will assist in the defense of the outpost position, battle position, and intermediate position.

3. (a) Machine gun companies are assigned to centers of resistance as follows:

Co B 2d MG Bn to right center of resistance of north brigade sector.

MG Co 2d Inf to left center of resistance of north brigade sector.

MG Co 3d Inf to right center of resistance of south brigade sector.

Co B 3d MG Bn to left center of resistance of south brigade sector.

Commanders of centers of resistance will employ two machine gun platoons in the outpost position.

Commander of the right center of resistance of north brigade sector will so place his guns as to enfilade the river in the sector of the 2d Corps for 700 yards north of PINE HILL MILL. The 2d Corps enfilades the river for 800 yards south of PINE HILL MILL. The commander of the left center of resistane of south brigade sector will enfilade the river in the sector of the 2d Div for 1,000 yards south of STULL.

Commanders of centers of resistance will assign machine gun sections to connecting groups as follows:

Right center of resistance north brigade sector to connecting group maintaining contact to the 2d Corps.

Left center of resistance north brigade sector to connecting group of 2d Brig.

Right center of resistance south brigade sector to connecting group to 1st Brig.

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Left center of resistance south brigade sector to connecting group to 2d Div.

All guns not employed in the outpost position or with connecting groups will be used for flanking the main line of resistance of the battle position.

(b) Brigade commanders will employ the following organizations in defense of the battle position, the guns being echeloned in depth from its line of resistance to battalion reserve line:

2d MG Bn (less Cos A and B)
3d MG Bn (less Cos A and B)

(c) Brigade commanders will employ the following companies on the regimental reserve line, posting the guns across the most probable lines of an enemy advance with the mission of limiting the penetration between centers of resistance and of assisting counter-attacks:

MG Co 1st Inf.
MG Co 4th Inf.

(d) The 1st MG Bn, Co A, 2d MG Bn, Co A, 3d MG Bn, constitute part of the division reserve.

The 1st MG Bn will take position at STUMPTOWN. It will reconnoiter and prepare positions on the regimental reserve line of the battle position; on the intermediate position, will prepare positions for the defense of TANEYTOWN and 1,000 yards to both the north and south.

Co A, 2d MG Bn will take position near 358.7—729.0. It will reconnoiter and prepare positions on the intermediate positions from a point 1,000 yards north of TANEYTOWN to the northern boundary of the division sector.

Co A, 3d MG Bn will take position near 357.0—727.0. It will reconnoiter and prepare positions on the intermediate position from a point 1,000 yards south of TANEYTOWN to the southern boundary of the division sector.

(x) 1. Brigade commanders and CO 1st MG Bn will prescribe details of positions and missions. After positions have been selected and missions assigned, maps showing disposition and missions will be forwarded to the DMGO without delay. Thereafter all changes will be reported at once.

2. All guns in advance of the regimental reserve line, in addition to their battle missions, will be given an SOS mission in front of the line of observation. The maximum amount of enfilade fire will be directed on the MONOCACY RIVER and on its right bank. All bridges over the MONOCACY will be covered by direct fire.

3. Guns on the regimental reserve line will be prepared to place a barrage between the line of resistance of the outpost position and the line of resistance of the battle position. This barrage will be put down only on the orders of brigade commanders.

4. The machine gun companies will be under the command of the following superior officers:

Companies assigned to centers of resistance—CO centers of resistance.

Companies assigned to defense of the battle position, including the regimental reserve line—Brig MG Officers.

Companies in Reserve—DMGO.

5. In the battle position, one gun in each section, and in the division reserve, one platoon in each company will be designated for anti-aircraft defense.

6. Emplacements will be constructed in all positions and will be carefully camouflaged. Cover trenches for gun squads

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will be constructed after the completion of the emplacements.

7. In case of attack positions in the outpost position will be held until the receipt of orders to withdraw; in the battle position they will be held at all costs; troops in division reserve will be alerted.
8. Routes for withdrawal from the outpost position will be reconnoitered.
9. Barrages will be prepared for the assistance of local counter-attacks.

4. (a) Station for Slightly Wounded: OREGON S. H.
   (b) There will be 10,000 rounds of ammunition in each emplacement. Each company will establish an ammunition dump of 72,000 rounds, including armor piercing and tracer bullets. Combat wagons and carts at disposition of company commanders.
   (c) Field train will join companies.
5. (a) Plan of Signal Communications: No change.
   (b) Command Posts.
   1st Div—STUMPTOWN.
   1st MG Bn—STUMPTOWN.
   Other units to be designated by brigade commanders.

X
C of S.

M
Lt Col. DMGO
Distribution:
Same as FO No 7, 1st Div and following additional:
3 copies, CO, 1st MG Bn
5 copies, CO, 2d MG Bn
5 copies, CO, 3d MG Bn

Discussion

It is assumed that during the time that the 1st Division was driving the enemy west of the Monocacy there had been some opportunity for reconnaissance, and that the division machine gun officer has some knowledge of the ground which will assist him in making up the machine gun plan. The ground is held temporarily by the troops that took it in the attack. While the disposition of these troops would not be satisfactory for a defensive zone they are such as to permit the division to occupy the defensive zone much more deliberately than troops would take up a defensive position in a meeting engagement. The amount of detail in the division order indicates that the division is not making a hurried occupation of a position but such a methodical occupation as to avoid future changes. From his conference with G3 the division machine gun officer knows that this is the case. For this reason he will make as full and complete a plan as is possible with his present knowledge of the

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terrain. In a meeting engagement there would usually be no machine gun plan. The paragraph of the division order, pertaining to machine guns, would cover the few details that would be given to the troops. This paragraph would indicate the number of companies to be posted on each line by each brigade, and the number to be held in brigade and division reserves. Attention would probably be directed to any strong points which could be made the key to the position by defending them strongly with machine guns or to points of special weakness. On the contrary, if the division had been holding the position for a month and a new order was being issued reorganizing the position the machine gun plan would go into much more detail. In that case paragraph 3 of the plan would be accompanied by tables and maps showing the exact locations of all guns and the exact lines of fire, both for their battle missions and service of supply missions.

The information of our own troops shown in par. 1 is necessarily quite complete. The subordinate commanders cannot place their guns to defend certain lines without knowing the definite location of those lines. In the same way they must know the limits of the sectors and subsectors in order to consult with the infantry commanders as to the mutual support of the infantry and machine guns. In the copies of the machine gun plan that accompany the division order par. 1 could be omitted, but it is absolutely essential that all of this information be furnished to machine gun companies.

The division machine gun officer keeps a roster of front line duty performed by the machine gun companies of the division. In this case it was assumed that Company A, 2d Machine Gun Battalion, and Company A, 3d Machine Gun Battalion, had most recently completed a tour in the front line and for this reason were placed in the division reserve. Machine gun companies, 1st and 4th Infantry, for similar reasons were assigned to the regimental reserve line. In order to equalize front line duty, therefore, the machine gun plan should designate certain companies to defend the different lines rather than indicate a certain number of companies. In some divisions in France the motorized machine gun battalion did its share of front line duty. Where the division has had particularly arduous duty this may be

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necessary in order to relieve other troops. As a general rule, however, it should not do its share of front line duty. It has been motorized to give the division commander a highly mobile reserve. Its special feature is wholly nullified as soon as it is assigned to a definite position well forward. As a rule, it should be held in reserve in the beginning of a defensive action.

The division commander had designated the maximum number of machine guns that could be used in the outpost position. This maximum number was used. Placing guns in position to enfilade the river is of extreme importance. The outpost positions offer the best locations for this purpose. The full number of guns authorized by the division commander can be used to very great advantage. There are portions of the river in the 2d Corps and the 2d Division which cannot be covered by fire from positions in these sectors. It is assumed that they have requested the 1st Division to cover these stretches. It is also assumed that the division machine gun officer has arranged with the 2d Corps for it to cover the river for 800 yards south of Pinehill Mill.

The ground from the battle position line of resistance to the location of the battalion reserves is naturally strong and offers more opportunities for machine gun defense than the ground between this location and the regimental reserve line. For this reason the guns intended for the immediate defense of the battle position line of resistance are not echeloned farther to the rear than the location of the battalion reserves.

The division commander had designated four machine gun companies to be used in division reserve. For this reason it was not deemed necessary to hold any guns in brigade reserve. The Monocacy is also a considerable obstacle which will give more time for the bringing up of division reserves. There would be no objection, however, to holding in brigade reserve the companies that were assigned to the regimental reserve line. If these companies had been held in reserve, they would have been directed to prepare positions on the regimental reserve line.

All of the companies in the division reserve were directed to prepare positions on the intermediate line since the division must be prepared to defend this line. The division

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battalion, owing to its mobility, can occupy positions farther forward more quickly than the other companies. For this reason they were directed to prepare positions on the regimental reserve line. There might be occasions when this battalion would be used to reinforce the battle position line of resistance but the more common use would be to limit penetrations where the enemy was having success.

In defending a river line, the first real defense will be offered usually at the river itself. With this in view all of the guns in advance of the regimental reserve line were given a S. O. S. mission of firing on the river and its right bank. The guns of this line could not reach the river and could only be useful after the enemy had penetrated the line of resistance of the outpost position. They were directed to prepare barrages to be placed between the line of resistance of the outpost position and that of the battle position. These barrages, however, must be used with discretion or they will cause losses to our own troops. Therefore it was considered advisable to permit them to be ordered only by brigade commanders.

Maps showing location and missions of all guns were called for in order that a careful study might be made of the machine gun defense and needed changes ordered. Changes of location of guns was not prohibited, after these maps were furnished but reports of all changes were ordered. In some units in France changes in positions or missions of machine guns were only permitted with authority of division headquarters. This tends to destroy initiative. It is believed to be better to permit the changes, but to require reports. If a study of the situation shows that the change is detrimental to the scheme of defense as a whole, the guns should then be returned to their original positions.

The machine guns in the outpost position should ordinarily be under the command of some one farther forward than the brigade commander. In this case the battalion occupying the center of resistance occupied the same sector as the regiment. It seemed better therefore to place these guns under the battalion commander who could better control their action in case of attack. The function of the guns in the battle position call for a considerable

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amount of firing outside of the regimental subsectors and they can best be controlled by the brigade commander.

Where guns are actually in position the anti-aircraft defense can best be carried out by designating a gun in each section. In the rear areas, however, this would keep an unnecessary large number of guns constantly on duty. The designating of a complete platoon of each company for the protection of the reserves will give the other platoons an opportunity to do much better training.

Standing orders for gun positions require 10,000 rounds of ammunition to be kept at each gun position. However, since the situation is just changing from the offensive to the defensive it may be well to order that this ammunition be provided. Some officers might assume that the offensive would soon be resumed and that the ammunition was unnecessary.

The Artillery in a Defensive Sector

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

ANNEX No 2 to FIELD ORDERS No 7, 1st DIV, 2 JUNE 20

1st FA Brig,
STUMPTOWN, PA.
2 June 20, 8:00 PM

FIELD ORDERS }
No 7. }

Maps: 1:62500, Taneytown and Emmitsburg Quadrangles.
1:21120, Kingsdale, Taneytown and Emmitsburg Sheets; and attached map, showing barrages and counter-preparations (map pocket Chapter VI-D).

1. (a) The enemy has been forced across the MONOCACY. Our advance elements are in contact with the enemy along this river, on which general line our army halts.

Our corps, holding the line of the MONOCACY, defends the line: LONGVILLE (inclusive)—hill 526—hill 532—hill 483—hill 524—ridge one-half mile west of MOUNT ZION CHURCH.

No change in corps boundaries.

(b) 1st Div will organize and defend the TANEYTOWN sector.

Northern boundary: Same as northern boundary 1st Corps.

Southern boundary: SHADES SCHOOL—TREVANION—CRABSTER—RJ 498—RJ 489—STULL (all inclusive).

Eastern boundary: BIG PIPE CREEK.

(c) Positions:

An outpost position with its line of resistance: 351.8—733.0 351.4—732.4; MOUNTAIN VIEW FARM—hill 503—hill 483—RJ 433—hill 427—hill at 347.8—727.5.

A battle position on the line LONGVILLE (inclusive); hill 526—hill 532—hill 524—350.5-729.7—hill 483—348.6-728.5

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RJ 489—hill 524; with regimental reserve line along 355.8—732.4; 354.4—731.1; 353.6—730.1; 352.3—728.2; CLEAR VIEW S. H.; 351.0—726.5.

An intermediate position: hill 588—hill 587—TANEYTOWN—hill 561—hill 540.

A switch position: hill 567—LONGVILLE—hill 532.

(d) Brigade sectors:

North brigade sector.

South brigade sector.

Boundary line between brigade sectors: PLEASANT VALLEY—BEAR MOUNT SCHOOL—MAYBERRY—STUMPTOWN—hill 561 hill 521—TANEYTOWN—farm at 352.5—729.5; RJ 456—349.4 730.6 (all inclusive) to north brigade sector.

The 1st Brigade, one company engineers attached, organizes and defends the north brigade sector.

The 2d Brigade, one company engineers attached, organizes and defends the south brigade sector.

2. (a) This brigade takes up a defensive position, and supports our division. The 1st Bn 347th HvA (4.7" guns) and the 1st Bn 348th HvA (155 GPF guns), Corps Artillery also supports the division.

3. (a) The 1st LA (less 1 btry) tonight will move into position approximately at follows:

One battery 357.2—728.6
One battery 355.0—730.3
One battery 355.1—730.8
One battery 355.3—732.2
One battery 357.2—731.1

One btry 1st LA will be designated for forward anti-tank defense, and in direct fire positions, selected by the battery commander will cover the approach of tanks or hostile infantry across the MONOCACY, along the entire division front.

The 1st LA furnishes barrages Nos 1 to 14, 61 to 66 and 91 to 99; counter-preparations 31 to 43 (all Nos inclusive) and supports the north brigade sector.

(b) The 2d LA moves tonight into positions approximately as follows:

One battery 350.1—726.4, arc of fire from LONGVILLE (inclusive) to 346—726.

One battery 352.6—727.5, arc of fire from LONGVILLE (inclusive) to 346—728.

One battery 354.0—727.8, arc of fire from LONGVILLE (inclusive) to 347—729.

One battery 353.5—729.2
One battery 353.8—730.1
One battery 356.2—726.3

It will furnish barrages Nos 15 to 31 and 67 to 81; counter-preparations Nos 44 to 52; (all Nos inclusive), and will support the south brigade sector.

(c) The 3d HvA will be assigned missions from these headquarters and moves tonight into positions approximately as follows:

One battery 351.8—728.8
One battery 353.2—728.2
One battery 355.4—726.4
One battery 357.9—727.4
One battery 355.1—730.3
One battery 355.9—729.9

It will furnish all barrages and counter-preparations shown in green numbered over 100, on attached map.

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(x) 1. All positions will be silent, and no firing will be conducted from them except in case of an attack. Harassing and other daily firings will be conducted by such number of guns as may be required from positions which will be changed frequently. Preparation for construction of permanent emplacements will be commenced.

2. The outpost position will deny to the enemy any foothold east of the MONOCACY. Except in the case of a foreseen attack the outpost position will be held.

3. The battle position will be defended at all hazards. The reserves will be kept mobile, and used in counter-attacks, and to maintain the line of resistance.

4. (a) Locations of echelons for all except personnel needed at guns as follows:

1st LA: LONG PIPE CREEK from STUMPTOWN (inclusive) to RJ 456 (inclusive).

2d LA: Area on both sides of road from COPPERVILLE (inclusive)—CR 507—RJ 434.

3d HvA: Area on both sides of road from STUMPTOWN (exclusive) to COPPERVILLE (exclusive).

1st Am Tn (less H Bn): vicinity road quadrilateral one mile northeast of MAYBERRY.

H Bn 1st Am Tn: vicinity of RJ ¾ mile south of RJ 551.

(b) Station for slightly wounded: OREGON S. H.

5. (a) Axes of signal communications: Standard.

(b) Barrage signals: No change.

(c) Command posts:

1st LA: 355.2—730.5.
2d LA: 354.3—728.7
3d HvA: 356.4—727.3
1st FA Brig: 358.0—727.4

FA
Brig Gen.

Distribution:

CO's 1st LA, 2d LA, 3d HvA and 1st Am Tn
C of S, G1, G3, 1st Div
1st Bn 347th HvA
1st Bn 348th HvA
CG 2d FA Brig
C of A, 1st Corps

The Sanitary Service in a Defensive Sector

LIEUTENANT COLONEL M. A. W. SHOCKLEY,
Medical Corps

MISSION OF THE SANITARY SERVICE:—To assign sanitary troops of the 1st Division to duty to cover the sector, and to organize the 1st Division sanitary service for extended occupation of the defensive position.

Such a mission contemplates distribution of the sanitary units in such a manner as to secure most economical use of personnel, materiel, and animals, with relief, rest, relaxation, and training; accumulation of supplies special and

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general, furniture, conveniences, and comforts beyond those possible in open operations; construction of fire cover and shelter; improvement of routes, means of evacuation; and increase of distance in order to avoid fire of long range artillery. Particular attention must be given to sanitation, bathing, delousing, clothing, laundry, water and food supply, and living conditions of the command; as these can be improved much, in contrast with the difficult conditions of open operations. Consideration must be given primarily to covering the outpost and battle position, later a plan for covering the intermediate positions must be prepared.

The fact that the position is covered by our troops and that the time allows it, a preliminary systematic reconnaissance of the sector can be made by the surgeon, sanitary inspector, commanding officer and directors, sanitary train, each examining the details of his special function; it permits more accurate determination of routes, sites, and amount of establishments. These to include battalion and regimental aid stations, bearer detachment posts, advanced ambulance heads, dressing stations, ambulance routes, ambulance control station, station for slightly wounded, sorting and gas hospitals, and hospitals for sick and slight cases.

The evacuation is provided by the corps and army which have mobile surgical units and mobile degassing units ready for duty with the divisions provide mobile surgical and gas hospitals, evacuation hospitals and evacuation ambulance companies for evacuation from corps and divisions. In the case of the 1st Division, its route of evacuation is via the Taneytown Road to the corps and army establishments in the vicinity of Westminster and to the east of it. This route of evacuation, as this is an improved road, will tie the field hospitals and station for slightly wounded to a position near the division.

DIVISION ROADS:—(See map 1:62500.) The sector shows three fairly direct routes to the front; one near the northern boundary, crossroads 485—road junction 554—Longville; a central one, the Bridgeport—Taneytown—Westminster road; a southern one, crossroads 485—Copperville—road junctions 561—507—489—Keysville.

The central route is very direct and leads through Taneytown. Parts of it can be observed from Hoffman Hill.

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Its forward stretches and Taneytown are liable to receive considerable fire. The northern and southern routes, while longer, are less liable to fire and cannot be well enfiladed. All of these routes connect with lateral improved roads leading to the brigade sectors in the outpost position, battle position and intermediate positions.

REGIMENTAL AID AND DRESSING STATIONS:—The north brigade sector can be approached by the northern route or by the central route—the latter the most direct. The outpost and battle positions can generally be reached at night by improved roads, except south of the Taneytown Road, although use of unimproved roads existing would be advantageous. Several stream lines and wooded areas indicate positions of communicating trenches and connect with similar stream lines and wooded areas to the rear of the first battle position. Examining the map 1:21120, it is seen that the roads in the battle position, north brigade sector, are all tied in to the Bridgeport—Taneytown road and to the Longville—Taneytown road. The stretch of this last road between road junctions 487—491 entirely dominates the zone, the northern and central route, and connects with the southern route. The average distance of this stretch is one and one-half miles from the line of resistance battle position. The stream line of Piney Creek, and its tributary swales and wooded areas leading from the crest, covers the battle position and indicates the position of communicating trenches. All of these lead to the Piney Creek crossing of the 487—491 road.

The position of the regimental aid station of the right regiment, as the result of line of probable drift and communication trench, will be, probably, on the stream line and unimproved road near co-ordinate 354—731. The position of the regimental aid station of the left regiment 1st Brigade will be in the vicinity of the stream crossing 600 yards east of crossroads 476.

In consideration of the routes of movement from the front by walkers and litters along these stream lines and road routes, a dressing station should be established in the vicinity to afford most economical use of the routes. The Piney Creek crossing north of road junction 491 (road junction 436 on 1:62500 map) is at a central point on these

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routes, and affords cover and conveniences. The cliff near at hand also permits drifting for fire cover. This site will be chosen for a dressing station.

The sector of the 2d Brigade is covered by roads, road junctions 507—456 and road junctions 507—478—489, and lateral roads between, and by the Piney Creek stream line and its tributary swales. Piney Creek crosses midway on the 507—456 road.

The regimental aid stations from right to left will probably be in the vicinity of the house at the elbow of unimproved roads leading north from 478, and in the vicinity of 402 stream crossing of unimproved road leading south from 441. With lines of drift and communicating trenches leading to Piney Creek in the vicinity of road junction at 351.8—729.1 and since this road is the only available route to 402 (and also available for the right regimental aid station), the dressing station is tied to the road and the stream. As this position furnishes cover, water and proper slopes for tunnelling for fire cover, as well as direct connection with the southern and central ambulance routes, it must be accepted as a site for a dressing station.

AMBULANCE CONTROL STATION—AMBULANCE HEADS—BEARER POSTS:—The road system about the dressing station sites shows that both improved and unimproved roads exist in each brigade sector, and, until the unimproved roads are metalled and made passable for motors at all times, both horsed and motor ambulances will be required for duty in front of the dressing stations. Such a condition requires pooling of transportation, systematic control under the director of ambulance companies, and attachment of bearer detachments and ambulance detachments to a general ambulance control station, under a single head, for relief, reinforcement and rest. Ambulance heads and bearer posts must be established for day and night duty to secure most economical service. Such a situation requires a station for these litter and ambulance detachments (taken from ambulance companies and placed under the control of the director) where they will have rest between duty tours. This station should be beyond fire of 75's, should have cover, shelter, conveniences and should be on a practicable route; yet near enough to permit ready reinforcement and replace-

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ment of establishments, and not require excessive movement of personnel coming back for rest.

Road junctions 555, 528 and 551 are all on the routes of ambulance movement, and might be used for this station. Road junction 528, however, covers the two zones more economically, and is on the central route which will probably be used by night reliefs. It is also nearer the intersection of the routes from the front and is the probable site of the station for slightly wounded, field hospitals, and medical supply unit. Road junction 528 will be chosen and one ambulance company will be placed here to furnish a local reserve, a running relief for bearers, dressing station parties, ambulance detachments, and an overhead for administration and supply.

The general sites of these establishments can be determined by the map but details of position, enemy fire habits, the finer details of terrain, visibility, and routes, are not shown by the map or by preliminary reconnaissance and must be determined by actual experience on the ground. Consequently, in preparing the plan for occupation of the sector, these details will not be included and the bearer detachments will be left with the companies to establish the dressing stations for primary disposition. Later the director of ambulance companies will make emergency dispositions for bearer posts, ambulance heads and day and night advanced ambulance routes, and submit recommendations for permanent ones.

AMBULANCE ROUTES:—The liability of the excellent Taneytown Road to fire and congestion by traffic renders it undesirable for day and fair weather ambulance traffic, but available for night traffic. The fact that the northern and southern routes are not completely metalled will possibly render them impassable for motors in wet weather. But in the present season, summer, they will probably be passable. Consequently, the northern and southern routes will be chosen for day movement of ambulances and the Taneytown Road for night movement.

As all these routes intersect at crossroads 484 (485 on 1:62500 map), about four and one-half miles from the line of resistance battle position, this point on the route of evacua-

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tion might be used as a position for a station for slightly wounded, if in front of the site of the field hospitals.

FIELD HOSPITALS—MEDICAL SUPPLY UNIT—STATION FOR SLIGHTLY WOUNDED—RESERVE UNITS:—The intersection of the routes of ambulance movement at crossroads 485, on the Taneytown Road, the route of evacuation, ties the sites of the field hospitals to a point east of the intersection on this road. All that is further required is to secure distance and distribution to avoid fire of medium range guns, cover, water, convenient site, and supplies near at hand. These can be secured by use of the polygon surrounded by the unimproved road on the Taneytown Road between Big Pipe and Bear Creeks, about five and one-half miles from the battle position and seven miles from enemy guns. The area gives sufficient space also for the medical supply unit and ambulance section, reserve or rest units. It will be chosen and authority will be requested from the corps for its use, as it is east of the 1st Division eastern boundary. The sites of the field hospitals having been determined as east of crossroads 485 (which was selected as a tentative site for the station for slightly wounded) this position can now be chosen for the station for slightly wounded. As the immediate vicinity of the crossroads is undesirable on account of liability to harassing fire and congestion and the fact that it affords no shelter, the Oregon School House on the southern route 400 yards south of 485 was chosen. This affords shelter, water, and a road circuit. It can be manned by the field hospitals near at hand, equipped by a camp infirmary, and can be evacuated by empty trucks going to the railhead, with little detour.

As the situation on account of its defensive nature permits establishment of all hospitals, the 1st and 2d Field Hospital Companies will be used as sorting and gas hospitals respectively and the 3d and 4th Field Hospital Companies for moderately sick, contagious cases, and moderately wounded. The area can further be used as a supply, rest, and training area for sanitary troops. One reserve ambulance company will be held here for rest, training and collection from organizations in rest or reserve, which will be camped or cantoned near at hand.

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SUPPLY:—Owing to this defensive situation,the medical supply unit will be required to establish a dump and to refill immediately with reserve litters and blankets; then dump and secure entrenching tools, trench litters, wheeled litters, anti-gass supplies, and lighting and heating equipment for issue to battalion and regimental aid stations, bearer and dressing stations, and field hospitals. This will occur after occupation and will not be ordered in the first administrative order.

CAMP INFIRMARIES:—This defensive situation permits use of regimental aid stations by all units except the heavy artillery regiment, which will be, probably, much dispersed. The remaining camp infirmaries not disposed of will be required by the station for slightly wounded and will be so assigned.

EVACUATION:—Unless otherwise ordered by the corps or army, evacuation will be staged from field hospitals by corps or army agencies.

INTERMEDIATE POSITION:—The plans for occupation of the intermediate position cannot be made until the combatant dispositions for the occupation of this position are known.

Office of the Surgeon,
2d Echelon, 1st Division,
2 June 20, 5:20 PM

MEMORANDUM FOR G1, 1ST DIVISION.

SUBJECT: *Plan of evacuation, Taneytown Sector.*

Maps: 1:62500, Taneytown Quadrangle.

1. Following plan of medical department collection, hospitalization, supply and evacuation for Taneytown sector submitted:—

Organization and Location	No. of Units	Function
I. COLLECTION:		
(a) Sn Tn 1st Div	1 4	Establish SSW vicinity OREGON S. H.
(b) Amb Cos 1st Amb Co (less Amb Det) vicinity crossing PINEY CREEK RJ 436.	1	Collect north brigade sector.
4th Amb Co (less Amb Det) vicinity PINEY CREEK 1½ miles NW CR 507.	1	Collect south brigade sector.
Hq Amb Sec 1st Sn Tn. 2d Amb Co, Dets 1st and 4th Amb Cos vicinity woods and farm road ½ mile west of CR 485 on TANEYTOWN ROAD.	1	General ambulance control station.

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3d Amb Co, vicinity woods 1,100 yards SE of CR 485.	1	Reserve
(c) Camp Infmies		
To all regiments except 3d HvA.	7	Regimental aid stations
To OREGON SCHOOL HOUSE.	1	Station for slightly wounded

II. HOSPITALIZATION.

Hq Sn Tn		1 sorting hospital
Hq F Hosp Sec	4	1 gas hospital
Mob Lab		2 hospitals for moderately sick, wounded and contagious.
Attached army units vicinity woods 1,100 yards SE of crossroads 485.		

III. SUPPLY.

Med Sup Unit Vicinity wood 1,100 yards SE of crossroads 485.	1	Dump and refill with trench stores. Supply point WESTMINSTER.

IV. ROUTES AND DESTINATIONS:

Day ambulance routes—To and from field hospitals.
North brigade sector, CR 485—RJ 445—RJ 554—CR 489—RJ 526.
South brigade sector, CR 485—CR 507—RJ 551—RJ 507.
Night routes—to and from field hospitals.
North brigade sector via crossroads 485—TANEYTOWN—road junction 436.
South brigade sector via crossroads 485—TANEYTOWN—road junction 507.
Slightly wounded to SSW at OREGON S. H. near TANEYTOWN ROAD. All other to sorting hospital.

V. CLASSIFICATION—Routine.

VI. EVACUATION—Walkers by division trucks.

Transport cases by corps and army.

2. Request that empty trucks going to railhead be sent to the station for slightly wounded at OREGON S. H. for transportation of walkers to WESTMINSTER.

3. Request that action be taken to secure assistance for sanitary troops as to labor and material for bombproofing local aid posts, battalion aid stations, regimental aid stations, bearer posts (in regimental areas) and dressing stations (division area).

XYZ,
Surgeon, 1st Division

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Administrative Orders of a Defensive Sector

MAJOR PELHAM D. GLASSFORD,
Field Artillery

1st Div,
STUMPTOWN, PA.,
2 June 20, 5:00 PM.

ADMINISTRATIVE ORDERS } To accompany FO No 7, 1st Division,
No 12. } 2 June 20.

Maps: 1:62500, Taneytown Sheet.
Road Circulation Map (marked Chapter VI-D in Map Pocket)

I. SUPPLY.

A. *Railhead*: WESTMINSTER.

B. *Rations*: Distributing points, after 11:00 AM, 3 June.
1. Road junction 561, one mile east of CRABSTER.
2d Brig: 11:00 AM
2d LA: 2:00 PM
3d HvA: 2:30 PM
2. Road junction 554, one mile northeast of TANEYTOWN.
1st Brig: 11:30 AM
1st FA Brig (less 2d LA and 3d HvA): 2:00 PM
Other units of the division: 3:00 PM

C. *Ammunition*:
1. Refilling point: all arms, at corps park, FAIRVIEW S. H. Combat trains of the 3d HvA will refill at this point.
2. Distributing Stations: all arms except heavy artillery, road junction 551, 1½ miles southeast of TANEYTOWN on COPPERVILLE ROAD.

D. *Engineer Material*:
1. Refilling point: tools and material, corps park at UNIONTOWN.
2. Distributing point: tools and material, at farm road 1½ miles east of TANEYTOWN on the STUMPTOWN ROAD.

E. *Signal Material*:
Refilling point: corps park, UNIONTOWN. Issued on requisition approved by G1.

F. *Gasoline and Oil*:
Distributing point: at location of Service Park Unit.

G. *Medical Supplies*:
Refilling point: corps park, WESTMINSTER.

H. *Quartermaster Supplies*:
Refilling point: WESTMINSTER.

I. Other supplies: no change.

II. EVACUATION.

A. *Men*:
1. Dressing stations:
(a) North brigade sector: road junction 436, vicinity of crossing of PINEY CREEK, one mile north of TANEYTOWN.
(b) South brigade sector: vicinity of crossing of PINEY CREEK, one mile northeast of CLEARVIEW S. H.

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(c) Routes to and from field hospital:
Day routes:
North brigade sector: CR 485—RJ 445—RJ 554—CR 469—RJ 526.
South brigade sector: CR 485—CR 507—RJ 551—RJ 561—RJ 507.
Night route: TANEYTOWN road.

2. Field hospital: east of BIG PIPE CREEK on TANEYTOWN road. Evacuation from field hospital by corps.
3. Station for slightly wounded: OREGON S. H.

B. *Animals*:

1. Collection point for sick and wounded animals:
Mobile veterinary section: vicinity of TREVANION.
2. Evacuation by division veterinarian to corps veterinary hospital at UNIONTOWN.

III. ROADS.

A. *Restrictions*: the TANEYTOWN road from WESTMINSTER to TYRONE is reserved for motor vehicles.

B. *Maintenance*: by division engineers in division area, by corps east of division area boundary. Bridge in vicinity OREGON S. H. to be reinforced to capacity of 15 tons.

C. *Circulation*:

1. Motor transportation except motorcycles will not go west of regimental reserve line. Horse-drawn vehicles will go west of this line only after dark.
2. See circulation map attached (see map reference above). All classes of transportation will obey this circulation except ambulances. For ambulance routes see Par. II-A-1-(c).

D. *Traffic Control*:

1. By APM on all road where circulation is prescribed within division area and on following roads:
TANEYTOWN ROAD, TANEYTOWN to TYRONE.
UNIONTOWN, north to TANEYTOWN ROAD.
UNIONTOWN—TREVANION ROAD.
FAIRVIEW S. H.—WEISHARRS MILL road to TANEYTOWN ROAD. (See discussion.)
2. Officer control post at TANEYTOWN.
3. Signs will be posted by APM within the division area and on roads mentioned in III D above.

IV. SALVAGE AND BURIAL.

A. *Salvage*:

1. Division salvage dumps at locations of division ration distributing points. Evacuation by supply train.
2. Corps salvage park at WESTMINSTER.
3. Salvage west of regimental reserve line by regiments. Salvage east of this line by division salvage officer.

B. *Burial*: under supervision of senior chaplain.

C. One company, 1st Engineers for salvage and burial under division salvage officer.

V. MILITARY POLICE.

A. Division stragglers line along NORTHERN CENTRAL R. R. Straggler collection point ½ mile south of TANEYTOWN on COPPERVILLE ROAD.

B. Mounted officers' patrol on TANEYTOWN ROAD from TANEYTOWN to TYRONE.

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VI. PRISONERS OF WAR.

A. Collecting point: ¼ mile east of TANEYTOWN on STUMPTOWN Road.
B. Evacuation to corps collecting point at HAHNS MILL by military police of the division.

VII. TRAINS.

A. *Divisional Trains*:

Horse section of ammunition train: road junction ¾ mile south of ammunition distributing station.
Engineer train: STUMPTOWN.
Sanitary train: vicinity location of field hospitals.
Ammunition train (less H Bn), mobile ordnance repair shop, supply train and service park unit: vicinity road quadrilateral one mile northeast of MAYBERRY. (See discussion.)

B. Empty trucks of supply train enroute to railhead will call at collection depot for slightly wounded at 360.5—725.9 road junction to evacuate walkers to WESTMINSTER.

By command of Maj Gen A.

X
C of S.

OFFICIAL:

Y
A.C. of S., G1
One enclosure—circulation map.

Distribution:

1. 1st Army
2. 1st Corps
3-6. 1st Brig
7-10. 2d Brig
11-15. 1st FA Brig
16-20. CO Tns
21-24. Div QM
25. 1st Engrs
26. 1st F Sig Bn
27. 1st MG Bn
28. Div Surg
29. Hq Tr
30. Billeting O
31. MTO
32. OO
33. 1st Sq 1st Cav
34. 1st Obsn Sq
35. Chap
36. Sn I
37. APM
38. CG
39-50. Staff
51. 2d Div
52. 8th Div
53. 3d Div
54. 4th Div

Discussion

THE ADMINISTRATIVE ORDER

This order should be issued simultaneously with, or as soon as practicable after the field order on which based. The first administrative order for this situation must be rather general in its terms; it will be amended from time to time to care for the new administrative details that develop.

RAILHEAD

The location was prescribed in the army or corps administrative order. As this railhead is only 11 miles from Taneytown, it will be the refilling point for the division sup-

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ply train, which will distribute to the field trains within the division area.

SUPPLIES

*G1 must have full knowledge of the road system and location of all organizations of the division before he can determine upon distributing points for rations and distributing stations for ammunition.

Owing to the limited personnel available with the division quartermaster, three ration distributing points are the maximum allowable. In this situation, one per infantry brigade fulfills the conditions of being near field trains and on good road circuit, the artillery being so located that it can conveniently use either one or the other of these two points.

Only one ammunition distributing station is considered necessary in this situation, because of the short haul required to organizations by the combat trains; the corps park being close to the division area, the trucks of the heavy artillery regiment can haul directly from refilling point to battery positions without difficulty. The corps order prescribes the location of this refilling point.

It has been assumed in this situation that previous administrative orders of the corps are known to this division; hence it is only necessary in this order to give additional information or changes as to supply. Since this situation is a defensive one, considerable engineer material will certainly be called for, and therefore this order calls for the establishment of a division engineer dump; the location of this dump is governed by a 60-cm. railway now under construction, which fact is known to G1.

EVACUATION

The division surgeon submits a memorandum to G1 on evacuation. Upon approval, the surgeon puts the memorandum into effect, G1 putting into the administrative order as much of the memorandum as is of general interest to the command.

*In this volume the existing practice, of having G1 responsible for supply, has been followed. The War Department contemplates adding a G4 to the division staff, who will be responsible for supply; G1 to be responsible for administration and personnel.

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In this situation, the corps has given permission to the division to locate its field hospital and medical supply units outside the division area and has notified the 3d Division of this.

Roads

The early designation of circulation and traffic control is of the greatest importance. On advice from either the division engineer (using his map platoon) or the assistant provost marshal, together with his own reconnaissance and a study of maps, G1 determines upon the circulation; this is improved upon as further information and troop location require, but any change must be announced 24 hours before going into effect in order that all units may be completely advised of the change. In this situation, main direct roads between important places are considered as two-way roads, all other full line roads are considered generally as one-way roads, both suitable for motor travel; all unimproved roads (dotted on map) are considered as one-way not suited to motor travel. The day and night use of roads should appear in this part of the order, if prescribed.

In this situation the corps has directed the circulation of some roads outside of the division area and the traffic control thereof by the division.

Military Police

The straggler line for the division should ordinarily be placed in rear of all combatant troops; in this situation, the troops being so greatly echeloned in depth, it is placed in rear of the battle position, notwithstanding the fact that divisional reserves and some artillery are in rear of the straggler line.

Trains

In locating the trains, G1 has the advice of the commanding officer of trains. Effort is made to locate the various units on the road giving best egress for their work. In this situation, the division has obtained authority of the corps to locate the major portion of the trains outside of the division area. Since these trains are located together, G1 has directed the commanding officer of trains to give each train its exact location, reporting action taken by him.

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In this situation, the corps has given permission to the division to locate its trains outside the division area and has notified the 3d Division of this.

DISTRIBUTION

G1 has determined upon a standard distribution, to which may be added distribution to any person or unit particularly interested. The twelve copies for division staff are for the staff, files, war diary, and spare copies.

Signal Communications in a Defensive Sector

CAPTAIN O. S. ALBRIGHT,
Signal Corps

DISCUSSION

This problem deals with a defensive zone in which conditions may continue on the defensive for a considerable length of time, perhaps for a month or much longer. Divisions and possibly corps may be withdrawn from the line and replaced by others. Divisions may be withdrawn and not replaced, causing an expansion of the front held by the remaining divisions, or additional divisions may be placed in the line, thus contracting the front of the original divisions. It is therefore necessary to consider the signal communications of the 1st Blue Division under two heads; first the communications that would be established immediately upon occupying the assigned sector; and second their gradual development into more permanent or better arranged systems.

The scheme of communications during operations of constant movement must be as simple as possible. As conditions of stability occur and continue, the initial systems should be gradually developed to meet the increased requirements. The initial systems should be established in such a manner that they may expand as the need arises.

At the time of issue of Field Orders No. 7, 1st Division, 2 June 20, 6:00 PM, the following locations would be definitely known by the division signal officer:

Command post, 1st Division, Stumptown.
Command post, 1st Corps, Westminster.
Command post, 8th Division, on our right, Kingsdale.

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Command post, 2d Division, on our left, Mt. Union Church.
Command post, 1st Brigade, farm house 354.8—730.4.
Command post, 2d Brigade, farm house 354.2—728.2.
Observation posts, 1st Division, hills 532, 524 and 483.

The division signal officer would get from the commanding general, 1st Field Artillery Brigade, as soon as that officer has made a first reading of the division field order, the following locations:

Command post, 1st Field Artillery Brigade, farm house 358.0—727.4.
Command post, 1st Light Artillery, farm house 355.2—730.5.
Command post, 2d Light Artillery, farm house 354.3—728.7.
Command post, 3d Heavy Artillery, farm house 356.4—327.3.

INITIAL INSTALLATION

(See par. 5, Field Orders No. 7, 1st Division, 2 June 20)

In this problem, the communications established by the 1st Division just prior to its occupying the sector are disregarded. The general plan of signal communications, designating radio call letters, wave lengths, pyrotechnic signals etc., was adopted when the 1st Division became a part of the 1st Corps and is now in effect. When the division takes over the designated sector, the usual (routine) communications would be established as follows:

Couriers, between message centers of all units.
Dropped messages, from the airplanes to the division or brigade dropping ground.
Radio, between units so equipped and from the airplane to the division or brigade command posts.

Wire systems shown below.

Wire System (Division):

From the division command post at Stumptown three lines would be laid to a forward communicating center at Taneytown, and one line to the command post of each battalion in division reserve. From the forward communicating center at Taneytown a line would be laid to each infantry brigade, and two lines continued along the axis to a second forward communication center at Boyds. A line would be laid to each of the three division observation posts from Boyds.

Wire System (1st Brigade):

The 1st Brigade would lay a line from the brigade command post to the command post of each of its regiments, and to the battalion in brigade reserve. The brigade axis is designated to the farm house at 352.8—731.2, which place would make an excellent forward communication center. Under the circumstances there is no immediate need for a line along the brigade axis to this point, on account of the position of the regimental command posts with reference to the brigade. This line would be laid later, however, and a brigade forward communicataion center established at point 352.8—731.2.

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Wire System (2d Brigade):

The location of the regimental posts of the 2d Brigade with respect to the brigade command post makes it advisable to establish a brigade forward communication center at some point on the brigade axis and fan out to the regiments from it. The 2d Brigade would lay two lines from the brigade command post to a forward communication center at point 352.95—728.3, and one line from there to each regimental command post. The 2d Brigade would also lay a line from the command post to its reserve battalion.

Wire System (Regiments):

Each regiment would lay lines to its own battalion command posts, establishing a regimental forward communication center as advisable in each case.

DEVELOPMENT OF SYSTEMS

When the initial installation of the different systems is completed the special needs of the situation would be studied and measures would be taken to expand the systems to meet these needs.

In this situation, the division signal officer would learn, shortly after their establishment, of the following locations:

Command post, 1st Infantry, farm house 200 yards east of hill 531.
Command post, 2d Infantry, farm house 353.8—730.0.
Command post, 3d Infantry, woods 351.2—728.8.
Command post, 4th Infantry, Clear View S. H.
Command post, 1st Brigade reserves, farm house 355.5—730.1.
Command post, 2d Brigade reserves, road junction 490.
Command posts, division reserves, farm house 358.9—729.3. and farm house 356.9—726.8.
Battalion command posts,
1st Light Artillery, farm house at 355.4—731.6 and farm house 355.5—730.1.
2d Light Artillery, farm house at 354.2—729.0, farm house at 352.2—727.1.
3d Heavy Artillery, farm house at 356.7—727.0, 355.4—729.9 and 352.8—728.9.
Corps artillery, farm house at 356.2—727.7 and 355.2—728.6.

He would then take steps to expand the systems as outlined below.

Radio: There would be practically no change in the radio system other than making arrangements for the most suitable shelter for the sets.

Dropped Messages: Regimental dropping grounds would be designated in addition to those of the division and brigades.

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Couriers: The courier service between the different message centers would be developed along lines best suited for periods of stabilization. A motorcycle service on a regular schedule would be established between division, brigade, and regimental message centers, instead of special trips by motorcycles or mounted couriers made heretofore as they become necessary. Runner routes between regiments, battalions, and companies would be designated and a regular schedule established whenever the expediency becomes apparent. Runners sent when necessary would, however, be the rule in the smaller units. Runner relay posts would be established between the units in the outpost position and their next superior unit in the battle position, wherever distances warranted.

Visual Signalling: Visual signalling over any but very short distances should be always considered as a means of last resort. Many conditions constantly arise under which it cannot function. It may, however, prove very valuable in an emergency for sending prearranged signals or very short messages when conditions favor its use. In the special situation of this problem it may be established as a special emergency means from the division observation posts to the rear. A central station for the purpose of receiving from all three observation posts could be established either on hill 507 or at Taneytown, from both of which points the three observation points are visible (in the graph for this paper, the central station is located on hill 507). This system would require a certain amount of time for its establishment. It would be necessary to get the larger size projector lights (35-mm.) from the army, to set them up aligned in the proper direction, to construct the necessary chutes, etc. This would require a day or two. Visual signalling would probably have already been established between platoons and companies, and companies and battalions in the front line position where circumstances permitted. These stations would be improved, lights carefully aligned by tests and shelter arranged.

Pigeons: A pigeon loft, if available, would be sent to the division by the army and would be established in the vicinity of the division command post, and a telephone line from the division command post run to it. Pigeon posts would be es-

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tablished at the division observation posts, at the command post of each strong point in the sector, and at any other points from which the division commander may wish special information.

WIRE SYSTEM

Where sectors have continued to be held defensively for some time, two distinct wire systems develop, one installed by the division, and one by the army. When the sector is first occupied, each division establishes its system in its own area. The more stable army system is gradually pushed forward from the army headquarters through the corps to the front. When it has been extended into the area of the front line divisions it becomes a fixture there, certain lines of the system within each division sector being designated by the army for division use, thus furnishing a permanent skeleton or nucleus for the different division or corps systems, which change as division or corps are shifted about in the area.

The Division Wire System: In developing the wire system special attention would be given to sheltered and lasting construction for the telephone centrals at the headquarters of the different units and at forward centers of communication. The switchboard would be sheltered from shell fire and dampness. Wire lines would be extended to important points. These lines would not extend in front of infantry battalion headquarters, except in the case of observation posts. Telephone communication as direct as possible would be arranged from the battalions of light artillery to the front line infantry battalions, and a priority arranged for calls for artillery fire. Telephone operators will be carefully supervised to see that they are constantly on the alert. The initial installation of wire put in by the division would be gone over and more firmly constructed. Routes of lines would be carefully planned to avoid shelled areas, the original routes being changed when necessary. A system of short stake construction would be inaugurated for the principal leads, such as from the division command post along the axis, from the division forward communicating center to the brigades, and probably forward along the brigade axis. Ultimately all the principal leads of the division system would be placed on short stakes set in small wire trenches.

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Some of the developments of the division wire system are shown in the graphic, in the map pocket, entitled Wire Communications, Chapter VI-D. A line would be run from the forward communication center at Taneytown to the central visual receiving station. A short line from the 1st Brigade command post would be run to this station, affording an alternate route to the division and for use in case the brigade desired to use one of the division observation posts. The axis of the 1st Brigade would be extended to a forward communicating center and the connections made as shown. The 2d Infantry would run a line to the division forward communicating center at Boyds and would utilize it as a forward center. Each battalion of light artillery would run a line to the infantry battalion in the front line which it supports. These lines are not shown on the graphic, but they would be prompt developments if not included in the initial system.

The division system would be further developed as the special services, such as balloons, flash or sound ranging, etc., were brought into the sector and connections needed to them.

The Army Wire Systems: This system consists of large wire leads radiating from army headquarters toward the front, and large lateral leads at different intervals running approximately parallel to the front. These radiating and lateral leads form a large grid system over the entire army area. At the points where the leads cross each other means are established to connect the different circuits of the two leads together, thus enabling routes of through telephone circuits to radiate in different directions from each junction point. At these junction points switchboards, test stations, or merely junction boxes may be established to facilitate this cross connection, depending upon the importance of the junction point as a center of communication. The different leads consists of from 10 to 20 or 30 circuits, depending on their position in the area and the amount of telephone traffic that is to be carried on over each. This grid system of telephone lines furnishes telephone communication throughout the army sector. The route followed by each lateral and forward lead are planned by the chief signal officer of the army. The main forward leads generally run

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through or in the vicinity of the headquarters of the different corps, and if necessary auxiliary leads are constructed between the main leads. The lateral leads are built across the area approximately on lines which would connect the headquarters of corps, of divisions, of brigades and sometimes of regiments. When they are first built these laterals do not actually connect the various command posts to each other, but the junction points are so arranged that short lines from the headquarters may be run to them and connection made there to a circuit running in the desired direction.

The army system is planned, constructed and controlled throughout the battle area by the army. The system is primarily intended for connecting to army headquarters the various units of army troops and special services scattered over the area, and secondarily for corps and division use. The necessity is evident for designating the lines for use of the division within its own area. Army troops are usually employed in constructing the system, although corps or division troops may be called upon to do the work within their respective areas.

This grid system requires time for its construction and is therefore a gradual development of the initial system installed by the army. The leads between the army and corps would probably be of overhead, bare wire constructions on poles and cross arms. When available, commercial systems may be taken over for this purpose. As the system approaches the front the bare wire overhead construction is replaced by field wire on account of enemy shelling. Within the division the construction of the army leads would usually be entirely of field wire. When field wire is used arrangements for its protection must be taken in building the leads. The best protection is constructed on short stakes placed in small trenches about 3 to 4 feet deep. If time is pressing the stakes may be driven into the surface of the ground and later as time permits trenches may be dug alongside and the construction transferred to them. The routes of these leads would be chosen behind some general feature of the ground for protection from artillery fire. The question of camouflage should be taken into consideration. This is very difficult and sometimes impracticable since telephone lines are

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extensive and stand out very plainly in airplane photographs.

As time goes on the field wire leads of the army system would be replaced by a buried cable system. A buried cable system requires much time for its construction and months may be required for this development. The trenches for the buried cable systems should be 7 feet or more deep for protection against enemy shells and bombs. The buried cable system was resorted to in France to a considerable extent, but in many cases even as late as the entry of American troops into the sectors, which was four years after they had been first occupied, these buried cable systems were still incomplete.

When field wire leads or buried cables are constructed, junction boxes are placed at frequent intervals, usually about 1000 yards apart, to provide for the connection of outside circuits. These junction boxes are in addition to those that may be placed at the junction of mutually perpendicular leads. The boxes are water tight compartments in which the wires from each direction terminate on terminal strips. Outside lines may be brought into these boxes and connected to the terminal strip, thus continuing the circuit through the box.

In the graphic two army laterals are shown. Under certain circumstances when conditions are favorable and require it, an additional lateral closer to the front would be constructed. As an example of the use of this system, it would be advantageous to be able to run a short line from the command post of the right battalion of the 3d Heavy Artillery to junction box No. 422, to connect to a circuit of the lead running to junction box No. 322; there to cross-connect in the box to a circuit running to junction box No. 321; and from this box to run a short outside line to the command post of the 3d Heavy Artillery. The communication would be in great part along a well constructed circuit which is permanent in the area.

The grid system could be followed to advantage in the development of the division system in a stabilized area, especially as applied to communications from batteries which frequently shift their positions.

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(E) THE INFANTRY DIVISION IN CORPS DEFENSE

CAPTAIN FAY W. BRABSON,
Infantry

The first part of Chapter VI-D, entitled "Organization of a Defensive Sector by a Division" was devoted largely to a general discussion of the positions it is found necessary for an infantry division holding a sector in corps defense to organize. This discussion will take up in more detail the tactical dispositions of a division holding a sector in corps defense and the duties of the different groups occupying these different positions under the special situation as given.

There are certain differences between a division acting alone in a defensive and a division as part of a corps in defense.

A DIVISION ALONE

A division acting alone will select a battle position on favorable ground and will cover this position by an outpost system. The flanks must be protected by covering detachments unless they rest on impassable obstacles. Through these detachments we will have timely warning of any activity on the flanks. We will be enabled thus to change front or to use the reserves most profitably in maintaining the position.

In a passive defense the front can be more extended because the troops usually held for counter-attack may be placed in the line.

In a passive defense the main factors relate to flank protection and duration of the defense. At the same time less depth is required, as generally other than local counter-attacks are not contemplated.

A DIVISION AS PART OF A CORPS

In the case of a division which is part of a corps in defense, it will not be necessary to be so careful about flank protection because the division on each flank will secure this in a measure, unless the division in question happens to be the flank division of a corps. In the case under consideration the 1st Division is an interior division and consequently may

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hold an extended frontage. It must be careful, however, to maintain communication with adjoining divisions. The division reserves are held back for use in local counter-attack, the corps commander holding the main force for launching a large counter-attack.

While theoretically an interior division with flanks secured can hold a broad front, practical difficulties in so doing arise in a case like the present one where the corps marching on a broad front met the enemy and took up a position in the open. The main difficulty is that in open warfare we must hold a more or less continuous line while in a stabilized situation gaps in the line are permissible provided they can be covered by fire from favorable localities on the right and left. However, in this situation if the lines remain unchanged over a considerable period, the front could be extended.

The corps assigned the line of defense of the battle position and the sector to be defended by the 1st Division. The division commander can influence greatly the success of the defense of this sector by the judicious selection of a boundary line between brigades. He may even divide the brigade sector into subsectors. In the situation in question this matter was left to the brigade commanders.

In a consideration as to what details shall be expressed in orders we find that the division commander may act within wide limits. These depend upon the time available before issuing the order, upon the definiteness of the information of the enemy, upon the knowledge of the ground the division commander has, upon the information the division commander has as to the intention of the higher commander and upon the reliance the division commander feels he can place in his next lower subordinates. In one extreme the division commander would announce the main line of resistance of the battle position, would select the brigade boundary line and would designate and locate the division reserves. In the other extreme the division commander would go into the details of further subdivision of subsectors, limiting points and strength of units to hold these subdivisions.

In occupying the sector the division commander must have the tactical viewpoint and the fortification viewpoint both in mind. The battalion commander on the other hand

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having been given a frontage will be concerned more with the fortification viewpoint within the limiting points given him. The commander who first gets an assignment of duties he cannot carry out will be the one to raise the question as to which viewpoint, the tactical or the fortification, shall dominate.

The division commander in the situation given has decided to place on the battle position four centers of resistance. A center of resistance is a subdivision of a sector prepared for defense and held normally by a battalion. The center of resistance is the proper command for a major. The rule that a center of resistance is held by a battalion is not inflexible; for instance here we have each center of resistance held by three companies, with a major in command of each center. The fourth company of each battalion is holding that part of the outpost position directly in front of the center of resistance it protects.

The frontage of each brigade sector is about 3000 yards. If we assume that the regimental subsectors are about equal in width we find each center of resistance commander responsible for 1500 yards and having available three companies of his battalion to defend this frontage along the battle position. With two companies he will organize strong points on the firing line and support lines. One company will be available to organize a strong point on the battalion reserve line.

In case of a foreseen attack the division commander may withdraw the outposts and accordingly will prepare the necessary plans and orders for such a contingency. If the outpost companies are to be used in the centers of resistance, they have a place in the scheme of defense and should thoroughly reconnoiter routes by which they would withdraw to such a position. The student may well investigate the defense by the 43d French Division on the Champagne front in July, 1918.

THE OUTPOST

In the present situation division orders state that, except in the case of a foreseen attack, the outpost troops will hold their positions until further orders.

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The duties of outpost troops are to maintain contact with the enemy, to hold him under observation, to screen the battle position and to delay the advance of the enemy in case he makes an attack in force. The basic idea of any outpost contemplates a withdrawal of the troops to the main position after their mission has been accomplished. By organizing the outpost troops along successive lines of strong points the troops in rear can cover the withdrawal of those in front. With few troops on outpost duty on a wide front as presented in this situation, the best disposition will be to hold two lines of groups, one in observation and one in local support. The local supports will be along the line of resistance of the outpost position. Outguards will be placed forward along probable lines of approach. Patrols will cover the front along our own bank of the river and will make aggressive reconnaissances west of the river.

Despite the fact that the bridges are intact it would be a mistake to try to keep detachments from the outpost on the west bank of the Monocacy. The enemy should be held away from the bridges by fire from the east side of the river. If it is the intention to hold bridgeheads, a large force must be sent across and a deep enough bridgehead held to make it worth while in aiding the crossing. Here the outpost troops are ordered to send strong and aggressive patrols across the river. The object is to keep contact with the enemy and to secure identifications. Silent raids by small patrols will accomplish the purpose.

Formal raids on trench areas require wire cutting. Surprise is difficult. The enemy will withdraw from the danger point or he will arrange to cover it with a destructive fire. He may figure out the route of return of the raiding party and by a concentration of fire cause us greater loss than we have gained in the raid. Silent raids with extensive and deep penetration are more apt to secure identifications, can move quickly and will suffer less losses. If battalion commanders are not successful with these patrols, all higher commanders and the G3 section of the general staff must ascertain the best places for sending these patrols, and prescribe the conduct of the patrols and of covering patrols. The necessary orders must be given to insure teamplay and

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co-operation of all arms concerned and arrangements must be perfected to insure the success of these patrols.

The Firing Line

The battalion generally forms for defense along two or more lines with 2 companies in front line and 2 companies in reserve. Relief is easy in such a formation. In the situation before us we have but 3 companies in each center of resistance and have placed 2 companies in front line and 1 in reserve. This makes a triangular system of relief. The reserve company is available for counter-attack and flank defense. Each company of the 3 forming each center of resistance in turn organizes its own strong point by placing its platoons along two or more lines. Normally it will have 2 platoons in front line and 2 in support. It should have at least 1 platoon available for counter-attack.

The student will find excellent instruction in locating the platoons, the strong points and the centers of resistance on the map.

The more widely distributed the troops, the more in detail will have to be the orders from the division.

The battalion reserve line is organized for defense the same as the firing line, and it shelters the companies in reserve of the battalions on that line. Such a reserve line is placed not less than 200 meters and not more than 400 meters in rear of the support line in order to have these companies close enough to attack promptly on the flank any troops attempting to surround the companies in front. Shelters for troops on the battalion reserve line are provided. The troops are advantageously located on the reverse slope and where possible the line is prepared for defense to the rear.

Reserves

A regiment should generally have at least one battalion available as a reserve for use in counter-attack. This force is available in the situation under discussion. It is gained by placing the second line battalion of each regiment on the regimental reserve line.

When the regiments have two battalions in front line and the brigade and division have taken away other bat-

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talions for reserve purposes or to protect flanks, the regimental commanders must rely on brigade or division reserve for help or else form their regimental reserves by taking one or more companies from their battalion reserve lines. Neither alternative is entirely satisfactory.

Similarly the brigade commander must get his brigade reserve from the second line battalions of his brigade. He may take an entire battalion for this purpose, choosing a battalion from the regiment that has the least assailable position in line or he may detach from the second line battalions one or more companies and hold them as brigade reserve. This forms a very powerful reserve for counter-attack purposes in a defense seeking a decision.

Normally the regimental reserve line is from 300 to 600 yards in rear of the battalion reserve line. Located at this distance the troops will be close enough to launch promptly counter-attacks on the flank of any troops attempting to surround the battalions in the front line, yet not in a position to suffer too much from fire directed upon the front line battalions. The companies located on the regimental reserve line organize strong points.

Under division instructions for the conduct of the defense the reserves are held mobile for use in counter-attack and to maintain the line of resistance, battle position. This should make it certain that reserves will not dig in and wait for the enemy to hunt them out but should indicate to them that they must hunt out the intruding enemy and drive him back.

Organization of the Ground

The best plan of organization of the ground is a series of centers of resistance, strong points and combat groups held by tactical units. With the forces usually available it will be impracticable to defend completely the entire line, since centers of resistance never completely cover the entire sector of responsibility. The series of centers of resistance, strong points and combat groups organized so as to defend principally to the front, but, if possible, organized for all around defense, will still leave open areas between the organized areas. Through these open areas penetration by the enemy is possible but this is not so important, provided we

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have stationed troops in adequate numbers and in proper places to launch an effective counter-attack to capture the penetrating troops or drive them out. These strong points are strengthened by artificial means and their communication should be such that the artillery and machine guns can promptly augment the fire of the infantry at the danger points.

Anticipating the likelihood of such a penetration and the need for counter-attack, how are the counter-attack troops to know of the danger, where it is, and what is its extent? Who has authority to issue orders for launching a counter-attack and for calling on the machine gun and artillery barrages? The student should study over these questions and propose to himself others also, if he would enter into the spirit of the defensive problems.

Signal Communications

In a well organized position the lieutenant in command of the combat group should have means of visual communication, in addition to runners, by which he would give notification to all concerned of the danger confronting him. This would be by Very pistol or rocket or by simple flag signal in a one or two-letter code. The direction of fall of the rocket might be employed to give the observer at the rear a more exact location of the danger point. If the artillery observation post sees the signal, the barrage is put down without further orders. The artillery information officer at the battalion headquarters should confirm this signal, whether the artillery has actually begun the barrage or not.

The infantry battalion observation post seeing the signal reports it to the infantry battalion commander who then decides what employment shall be made of all the arms at his disposal. The division observation post may pick up this same signal and send it direct to division headquarters. Normally there will be a telephone at battalion headquarters in a defensive situation and the information will be repeated to regimental headquarters which decides what action to take, such as to alert the regimental reserves.

With the distance there is between the outpost troops and the firing line in the situation in question it might be

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well to place a battalion radio set at the headquarters of each company on outpost.

When the commander of the strong point has been notified by runner or visual communication of the danger, it becomes his responsibility to take the proper measures, whether they shall be the launching of his counter-attack platoons, repeating the information to the battalion commander and asking for the use of such auxiliary weapons as the battalion commander has, or calling upon the artillery or the machine guns to put down a barrage provided for in the plans of these arms for the defense of the sector.

COUNTER-ATTACKS

The division order covering the conduct of defense, or in any case the standing orders will make it clear what persons are authorized to order an automatic counter-attack without going to higher authority. Such orders might restrict regimental commanders as to the employment of their reserves. For instance regimental commanders might be limited in their authority to the employment of their regimental reserves for the defense of a particular line only. In such a case they would have to seek higher authority before launching a counter-attack elsewhere.

In case the attacking force is so large that the local commander cannot handle the situation he must promptly notify the next higher commander of all the details and it will then be necessary for the higher commander to launch a formal counter-attack with artillery preparation. This will generally be after a period of several hours has elapsed.

In the present situation, in view of the distance between the outpost troops and the firing line, no doubt a considerable period of time would elapse before a battalion commander needs to take action against raiding troops. The battalion commander is the judge of his ability to launch a successful counter-attack without calling upon outside aid. Such local counter-attacks are automatic. They are supported by all the fire power the commander can call to his assistance.

The division order in providing for conduct of troops in case of attack has authorized any proper commander to call for machine gun and artillery barrages within the outpost position and between the outpost and battle positions

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in accordance with plans for the employment of the artillery and machine guns.

The corps order for the situation in question has this to say:

In case of a serious offensive, counter-attacks will be launched into the outpost position from the battle position only if the enemy has been definitely checked in front of the latter. Orders for such counter-attacks must come from the commanders of brigades, divisions or corps, according to the front involved.

In case of a local attack or a raid, counter-attacks will be launched from the zone of resistance involved to retake ground lost in the outpost position.

From this discussion it may be seen that each commander from the platoon commander up must make a study of the situation confronting him, analyzing the different plans possible in the different situations that may arise for the employment of the troops for which he is responsible and giving proper consideration to the relation his defense has to the general plan of defense.

Each commander in this analysis will find it necessary to work out in detail counter-attack plans. These will embrace different combinations of units and will be worked out so as to provide for counter-attacks in all directions where need for their employment may arise. The extent to which these attacks will be delivered is also a factor that will demand thought.

From the above discussion it may be seen that while a field order will direct the taking up of a defensive position and prescribe the manner of conducting the defense, it will be necessary in addition to have plans for organization of the ground, plans for counter-attack, etc., in case the defensive situation promises to extend over a considerable period.

The Field Artillery

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

A division in defense receives artillery assistance from the corps and if the corps is part of a larger unit, also from the army. A clear understanding of just what each of these organizations does is advisable.

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The army artillery furnishes anti-aircraft artillery defense, which includes special light and medium caliber batteries and machine gun organizations. In compliance with army orders, the division artillery may be required to conform with the general plan of anti-aircraft defense by utilizing its machine guns, as prescribed in the army plan. Interdiction fire at distances more than about 6000 yards from the front line of the division is usually also undertaken by the army artillery, but interdiction work, if desired in enemy forward areas, is left to the division.

From the corps artillery the division receives counter-battery protection. This is very important when on the defensive, as a large number of the casualties received in such situations are from hostile artillery fire. The division co-operates in the counter-battery work of the corps by communicating directly to indicated command posts all information useful to the counter-battery service. The division may also be called upon to co-operate in counter-battery firings by having certain assigned units receive their orders direct from the corps; or by detailing organizations which while left under division control, may have a dual function of assisting the counter-battery service when called upon to do so.

The division artillery should arrange to answer air calls on transitory targets. This is often prescribed by the corps since they control the greater part of the airplanes available. Certain batteries are detailed to answer such calls.

Arrangements must be made by the division artillery for giving assistance to, and obtaining assistance from, adjacent divisions. This may be done by direct communication between the commanding generals of the division artilleries, or it may be prescribed by the corps. The corps in any case usually reserves the right to adjust plans for mutual co-operation.

The primary duty of the division artillery in the defense is to furnish support to its infantry. There are two main methods of doing this:

(a) By defensive barrages.
(b) By COP (counter-offensive preparation) firings.

Defensive barrages are laid down close in front of the most forward positions proposed to be held. The lines on which these barrages lie are often referred to as service of

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supply lines. Generally, the division artillery cannot simultaneously cover the entire front. They, therefore, cover the most dangerous part of the front with *normal* barrages, on which the guns when not otherwise employed, are laid ready to fire on short notice, usually about 30 seconds. The balance of the front, in whole or in part, is covered by *eventual* barrages. While the necessary data for eventual barrages is kept up to date by the artillery, the guns must be re-laid for such barrages, and usually three or four minutes are required after the order has reached the artillery before such a barrage can be put down. These times may be reduced with well trained gun crews or under favorable circumstances.

These barrages are absolutely defensive fires, and should be called for only after the enemy has left his forward trenches, or other line of departure. These barrages are intended to act as a wall to stop or break up a hostile attack. During the World War, many hostile attacks were defeated by these barrages.

Barrages, both normal and eventual, should be numbered consecutively from one flank of the division. Each infantryman in the front lines should know the number of the barrage in his immediate front. This information is also shown on the battle maps of command posts. When time permits, barrages are called for by telephone, giving the number of barrage, or barrages, desired. In case of emergency, they may be called for by rocket signal from the forward trenches. White rockets should not be used, as it is sometimes impracticable to distinguish these from flares, but any other color or combination of colors may be used. The signal agreed upon should be changed frequently to avoid the enemy becoming acquainted with it, and by sending off false rockets inducing the artillery to lay down normal barrages without necessity. It is advisable to conceal from the enemy the position of normal barrages, and they should not be fired unless necessity exists. For practice, an eventual barrage should be fired.

When barrages are called for by rocket signals, the artillery fires immediately the barrage corresponding to the point opposite which the signal is fired from. Due to difficulty of selecting the proper rockets at night and to

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excitement, a wrong colored rocket is frequently fired causing transmission of false information. Battery and higher commanders of organizations firing the barrage, should call up on the telephone (without delaying the barrage) and ask if the rocket signal observed was correct and intended to call the barrage. This telephone proof is particularly important when the rocket is fired from the front lines instead of at a command post and when there is no unusual firing or other indication of an emergency.

Counter-offensive preparation fires are fired in a manner similar to barrages, and are numbered in a similar manner, but laid on the enemy's forward trench system or probable line of departure, with a view to breaking up a hostile attack before it has started. To utilize this fire it is necessary to have information that an attack is intended, and the approximate time the attack will be launched.

Counter-offensive preparation firings are offensive fires, fired before an attack has commenced, while barrages are defensive firings fired after the attack is under way. The counter-offensive preparation fire is the one to employ if information is at hand enabling this to be done.

The defensive assumes an inferiority, material, moral, or both. Generally the artillery of the defense is inferior in numbers to that of the enemy, and cannot afford to disclose its positions, and enter into a duel with superior hostile artillery.

For this reason the battery positions of the artillery in defense are as carefully concealed as circumstances will allow, and are not fired from unless an attack is actually believed to be under way. For such harassing or other firings as may be daily or nightly required, designated guns occupy temporary positions, returning to their permanent positions upon completing the program given them. The great danger to the defense is that, if the enemy discovers the artillery positions, he is liable to neutralize all of them on some occasion when he proposes to undertake the offensive. If the terrain is such that natural cover does not exist, and it is difficult to conceal artillery positions, each battery should have several positions, to be occupied in turn. In this case, probably some of the batteries will not be discovered at all, and the enemy, if he proposes to attack, will have to

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neutralize many more positions than if each battery had but one emplacement, and it would be impossible for the enemy to determine which of several positions are the ones actually occupied at a particular time.

If positions can be concealed in woods or other natural cover, it is not necessary to construct permanent emplacements. The tendency at the beginning of the World War was to build strong positions for the guns, but this changed toward the end, as it was almost impossible to prevent these strong places from being ultimately discovered and destroyed when the enemy considered it advisable and was ready to do so.

Certain batteries on the defensive should be so sited as to enable one or more guns to employ direct fire to the front and flanks, to provide against hostile tanks or infantry penetrating the defensive positions. Such provisions for local defense may be supplemented by single guns, well forward, to fire on tanks in case these advance. These forward guns should never be used unless an attack is actually made. They are immobile, concealed, and manned by a few men with a small amount of ammunition. Old guns condemned on account of worn out tubes are useful for such purposes, as for the short ranges at which they are employed they are accurate enough.

All artillery positions should have cover trenches in the vicinity for the personnel. Personnel, guns, and materiel not required at the positions themselves should be in back areas.

If switch lines exist in the division area or adjacent thereto, as is the case in the illustrative problem given, some batteries should be sited so as to be able to enfilade the front of the switch lines, should it be necessary to defend them.

The best defense against the enemy's artillery preparation is to meet it in kind, giving him back shell for shell, directed at his artillery, his lines of departure, his lines of communication, his observation stations, etc. Of these missions, the division artillery is principally concerned with the enemy lines of departure on which counter-offensive preparation fires should be directed as previously discussed.

It is obvious that additional protection must be provided in case the counter-offensive preparation fire does not stop

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the enemy who then penetrates the division front. Information as to where the penetration has taken place, and its extent, is of the utmost importance. For this the artillery has observation posts, distributed in depth so that not only the enemy's normal areas are under observation, but also the defender's own forward areas, so that hostile movements within the division area may be met.

If a plan for a counter-attack to meet such a hostile penetration exists, and it should always exist, the artillery assists the counter-attack by standing barrages on favorable lines to check the hostile penetration, or by rolling barrages to support the counter-attack.

Stationary barrages to limit hostile penetration are arranged in advance in the same manner as the defensive barrages on service of supply lines, which are laid on signal. They should be known to all concerned and fit in with the infantry counter-attack plans.

Rolling barrages for counter-attacks are also arranged in advance, starting and proceeding as called for by the counter-attack plan. Generally, they extend from the front of the position of the counter-attack troops to intervals between strong points through which the enemy will most likely penetrate. The greatest difficulty in such counter-attack barrages is to start the artillery and infantry off together. The experience of the British in the World War shows that it is best to have counter-attacks start at a prearranged time, such as the even hours or half hours. The officer who is charged with ordering the counter-attack gives a prearranged signal a sufficient time in advance to notify the artillery that at the next even hour or other agreed upon time, the attack will start. This signal must be given in time for the batteries to receive it or have it transmitted to them, due regard being had that during hostile attacks, lines of communication are liable to be interrupted, and visual signals obscured by smoke.

The positions of the division artillery on the defensive varies according to the situation but in general may be described as laying in belts, which for the light artillery is from 3,000 to 5,000 yards, and for the howitzer regiments 5,000 to 8,000 yards from the front line. But it is advisable to have at least one or two heavy batteries well

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forward to fire far into the enemy's rear areas, and a few light batteries well to the rear to provide for possible deep, hostile penetration.

Railroad lines, both standard and narrow gauge, should be utilized for ammunition supply, and batteries, where possible, should be located on or near railroads. Supply in this manner saves roads by removing traffic from them, and, in addition, enables rest to be given to combat trains.

In all defensive positions, it is the duty of the division artillery to prepare for possible future offensives. This includes a plan of employment for the artillery and the preparation of positions and firing data for reinforcing artillery. The method of doing this is a subject for the employment of artillery on the offensive, but the actual preparation is provided by the artillery in the sector from which the offensive is to be launched, during a prior defensive period.

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(F) RELIEF OF FRONT LINE DIVISIONS

CAPTAIN KERR T. RIGGS,
Cavalry

This discussion continues the situation of the 1st Division in a defensive sector as already discussed in Chapter VI-D.

Maps: 1:62500, Taneytown quadrangle and 1:21120 Taneytown, Emmitsburg, Kingsdale sheets.

Special Situation (Blue):

Despite the harassing measures of the Reds, especially with artillery, the organization of the defensive zone was pushed, particularly by night.

On the night of 7 June, 1920, the Reds made a demonstration against Pine Hill Mill (Palmer on Geological Survey Map 1:62500) with a force estimated at about one battalion supported by artillery fire, and crossed the Monocacy 1 mile north of Bridgeport. Our barrage broke up their formation, and they were driven back at daybreak.

At noon 8 June, 1920, the commanding general, 1st Corps, sends the following telegram to commanding generals, 1st and 4th Divisions:

> "4th Div will relieve 1st Div in line in TANEYTOWN sector. Relief will take place on night 9-10 June 20. The taking over of all combat, support, and reserve positions will be completed by 3:30 AM, 10 June. Details of relief to be arranged between CG, 1st Div and CG 4th Div. 4th Div will march to line of BIG PIPE CREEK from MARKERS MILL (BIG PIPE CREEK), inclusive, to OTTERDALE MILL, inclusive, on night of 8-9 June. From 7:00 PM, 9 June to 6:00 AM, 10 June OTTERDALE MILL—551 road and all roads north to northern boundary of corps sector will be available for making relief. Command of TANEYTOWN sector passes to CG, 4th Div 8:00 AM, 10 June. 1st and 4th Obsn Sqs pass to command of CG, 4th Div with command of TANEYTOWN sector. After relief, 1st Div will bivouac on line of BIG PIPE CREEK and march to corps reserve in UNIONTOWN area on night 10-11 June.
>
> X
> Com'd'g."

On night of 8-9 June, the 4th Division marched to line of Big Pipe Creek and went into bivouac in the woods along the creek as follows:

Headquarters 7th Brigade: Zimmerman Mill.
13th Infantry: northwest of Markers Mill (Big Pipe Mill on Map 1:21120).
14th Infantry: Zimmerman Mill.

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Headquarters 8th Brigade: Trevanion.
15th Infantry: Trevanion.
16th Infantry: Otterdale Mill.
Headquarters 4th Artillery Brigade: Oregon S. H.
10th Light Artillery: Bashere Mill.
11th Light Artillery: near 415.
12th Heavy Artillery: east of Oregon S. H.
10th Machine Gun Battalion: near 516.
11th Machine Gun Battalion: south of hill 608.
12th Machine Gun Battalion: between Otterdale Mill and 415.
4th Engineers and 4th Field Signal Battalion: along Bear Creek near 444.
Trains: in Uniontown area.

Before daylight on morning 9 June, the Reds made a raid against the salient formed by western bend of the Monocacy 1 mile north of Bridgeport. About 50 Blues were captured. The Reds had advanced to the rear line of the outpost position before they were driven back across the river. Harassing fire by artillery has increased daily; the losses of the 1st Division have been considerable.

Required:

1. The formal field order issued by the commanding general, 1st Division, for night of 9-10 June.

2. The formal field order issued by the commanding general, 4th Division, for night of 9-10 June.

First Requirement:

1st Div
STUMPTOWN, MD.,
9 June 20, 11:00 AM.

FIELD ORDERS
No 30.

Maps: 1:62500, Taneytown sheet.
1:21120, Taneytown and Kingsdale sheets.

1. Hostile harassing fire has increased. The enemy made a raid on our outpost position one mile north of BRIDGEPORT early this morning. The raid was repulsed.
2. The 1st Div will be relieved in line by the 4th Div and will pass to corps reserve, marching to the line of BIG PIPE CREEK tonight. Relief will be carried out in accordance with attached march and relief table and will be completed by 5:00 AM, 10 June 20.
3. (a) Details of infantry re iefs will be arranged by commanding officers concerned.
   (b) Relief of machine gun units in front line and battle position will be carried out under the instructions of commanders of infantry battalion centers of resistance.
   (c) Details of artillery relief will be arranged with the CG, 4th FA Brig, by CG, 1st FA Brig, who will issue the necessary orders to carry it into effect.

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Relief of artillery units will consist of relief of personnel only. Guns and material of 1st FA Brig will be left in position. Reliefs of personnel of anti-tank guns will be carried out under the instructions of infantry commanders of battalion centers of resistance in which guns are located.

(d) Details of relief of 1st F Sig Bn, 1st Engrs, and 1st Sn Tn will be arranged by chiefs of services concerned.

(e) 1st Obsn Sq and 4th Obsn Sq will pass to command of CG, 4th Div, with command of TANEYTOWN sector.

(x) 1. Command of infantry brigade sectors will pass at 4:00 AM, 10 June 20.

2. Command of infantry regimental subsectors will pass at 4:00 AM, 10 June 20.

3. All units of both divisions within TANEYTOWN sector will be under orders of CG, 1st Div, until command has passed. passed.

4. After certain hours designated in march and relief table, the march of elements of units of all arms in front line infantry battalion centers of resistance will be started as soon as relief of each element is completed, under the direction of commanding officers of infantry battalion centers of resistance and subject to restrictions and precautionary measures herein prescribed.

5. Completion of all moves and reliefs will be reported to brigade headquarters and thence by telephone to division headquarters.

6. No unusual bodies of troops will appear in the open during daylight hours.

Guides will meet all relieving columns at road crossings on NORTHERN CENTRAL RAILROAD. In the area west of railroad, the following precautions will be observed.

(a) Road crossings will be avoided by troops. Whenever practicable to do so, guides will conduct troops across country keeping approximately parallel to prescribed routes.

(b) Troops will maintain a distance of 50 yards between platoons.

7. Defense schemes, maps and surplus supplies will be turned over to relieving units.

8. Reduced quartering parties will precede their units to bivouacs on BIG PIPE CREEK. Regimental commanders will arrange for leaving necessary personnel to assist incoming units for 24 hours.

4. For administrative instructions and relief of trains see Adm O No 45.

5. Command of divisional sector will pass at 8:00 AM, 10 June 20. Division headquarters will close at STUMPTOWN at 8:00 AM, 10 June 20, and will open at UNIONTOWN same date and hour.

A
Maj Gen.

Distribution:

CG 1st Army
CG 1st Corps
CG 1st Div
Div Staff
CG 4th Div
CGs Adjacent Divs
CG 1st Brig (4)
CG 2d Brig (4)
CG 1st FA Brig (4)
CO 1st Engrs
CO 1st F Sig Bn
CO 1st MG Bn Mtz
CO Tns
CO MP Co
War Diary—File

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Discussion of the Solution

The units of the 4th Division having gone into bivouac along Big Pipe Creek on 9 June, their locations are considered as fixed by the conditions of the problem and, therefore, the solution is to be confined to the relief of the 1st Division by the 4th Division on the night of 9-10 June. The corps order requires that the relief be made in one night, that the taking over of positions by combat troops be completed by 3:30 AM, and that command of the Taneytown sector shall pass at 8:00 AM, 10 June.

It is assumed that observation squadrons of both divisions are under command of division sector commander and both working from division airdrome near Stumptown. This does not appear from the situation as given in the problem which is a continuation of other conferences. The 4th Observation Squadron would not be at rest in Uniontown area but would be working either with the corps squadron or with the squadron of some division in line.

The enemy has been active but has made no determined attack for the purpose of driving back the division. His activity has been mainly confined to our right brigade sector. Further activity in the outpost zone is to be expected. While a general attack is always possible, there is nothing in the situation to indicate that such an attack is probable. Severe harassing fire may be expected to continue.

The raid on the morning of 9 June lost us so many prisoners that the enemy knows most of our dispositions in the right brigade sector and probably those in the left sector also. It is assumed that the command was not warned on the night of 8-9 June that a division relief would take place on the night of 9-10 June, and that therefore the enemy has not learned of the relief from prisoners. If the outpost company knew of the relief last night, the enemy now knows of it.

In rear of the main battle position all of the ground in the sector is hidden from ground observation by the enemy except from Hoffman Hill and the hill about 1 mile southwest of it. The enemy undoubtedly has observation posts on these two hills which are about 3 miles west of the Mono-

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cacy. A considerable part of the division sector can be observed in the daytime from these observation posts.

In the first part of June the sun rises at 4:30 and sets at 7:25. The period of darkness is so short that it will be extremely difficult to complete the relief before daylight. The length of time before sunrise and after sunset, during which marching troops will be in danger of discovery by enemy planes, depends to a great extent upon the state of the weather, but certainly it will not be safe to march little can be seen by air observers after sunset or before sunrise.

An inspection of the map and measurement of a few road distances shows that from the bivouacs along Big Pipe Creek to the rear edges of front line centers of resistance the distances vary between 5¾ and 6½ miles. Marching at night, at least 3 hours will be required for the march of front line battalions and machine gun units with them. In the actual turning over of the centers of resistance, after relieving units have arrived, some elements of the outpost companies have to march a distance of at least 2 miles more. It therefore appears impossible to turn over the centers of resistance complete with outposts in 2 hours' time. It is probable, however, that all elements except the outpost companies and machine guns with them can be relieved in 2 hours. The time can be only estimated and cannot be accurately calculated.

Three hours marching in, plus 2 hours for actually turning over front line battalion centers of resistance, plus 3 hours marching out equals 8 hours which is the approximate duration of darkness in the first part of June. It therefore appears impossible to make the relief entirely during the dark hours of the night 9-10 June.

The next thing to be considered is how to make the best of the difficult situation and subject the command to the least danger from the enemy.

Since the relief is to be made in one night, it would be much less disastrous for it to be discovered in the morning when it is nearing completion and only a few troops of the outgoing division are left to get out of the sector, than to be discovered early in the evening and have the columns suffer all night from artillery fire and bombs.

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The following principles must therefore govern the relief:

1. Troops must not start before dark.
2. Actual turning over of elements in the battle and outpost positions must not be hurried, but must be done carefully and systematically to avoid possibi ity of discovery.
3. If departure from a normal relief, carefully executed entirely in the dark, is necessary, this departure must consist only in the late arrival of outgoing units at the bivouacs along Big Pipe Creek; and these units must be as few and small as possible.

Units in the regimental reserve line and those in rear of that line are not actually deployed (except the artillery). They are intended to reinforce the battle position. They can be assembled and be ready to march off upon arrival of relieving units. The time required for these units to turn over can therefore be closely estimated and it will be short. Having calculated the time of arrival of incoming units, we can therefore fix a time of departure for all infantry and machine gun units in rear of the battle position. The same is true of engineers and signal troops. All units in rear of the battle position can be gotten out of the way before front line units move.

The road situation for this relief is rather favorable. At least four roads are available for the march of infantry and machine guns from the four front line battalion centers of resistance to their bivouacs along Big Pipe Creek. Considering only these units (for, as we have seen, other troops will be put out of the way in time) no column will have either to cross the line of march of another or to march on the same road with a column from another battalion center of resistance. If a small element were started alone it would only have to follow a clear road from battle position to bivouac.

In the usual case, all the troops in a serial should be started off in one column, correctly arranged in order of march, with proper distances to reduce the effect of shell fire. To follow the rule in this case would result in exposing all the troops in the serial to aerial observation and consequent shell fire before they could reach the cover of the woods in their bivouacs along Big Pipe Creek. Discovery of marching columns of considerable size would indicate clearly to the enemy that a division relief was taking place.

The advantage of marching the troops out of front line battalion centers of resistance as fast as elements are re-

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lieved is apparent; and with the favorable road situation the disadvantages are reduced to a minimum. The most practicable method of starting these troops so that the maximum number will be under cover by daylight is to fix an hour after which all other troops will be out of the way, and to instruct commanders of front line battalions to start after that hour, the march of each element of their commands as large as a platoon as soon as the command has been turned over, subject only to the restriction that a minimum distance of 50 yards will be maintained between platoons.

It must be understood, however, that this is only an expedient applicable to this particular situation. If the road situation were less favorable, the danger of bad road jams would be great.

When a relief is to extend over two or more nights it is a general principle that the artillery should be relieved last in order that troops making the relief can have the protection of artillery thoroughly acquainted with the sector, with the protective barrages, and with the location of enemy batteries for counter-battery work, etc. Firing data having all been figured out for this work and guns registered, the old artillery can furnish much better protection than the new.

In this case, it is obviously impossible to have the protection of the old artillery for the infantry relief. However, the same effect can be obtained to a limited extent by leaving the old guns in place and relieving the personnel only. By leaving a few of the officers and men of the 1st Division with the batteries for a day or so, the protection can be increased still more.

Regarded from the point of view of logistics, there are other advantages in relieving personnel only in a case of this kind. The roads cannot be cleared of infantry and be turned over for the use of the artillery at any time during the relief. If marching with guns and materiel, there would be columns of artillery with a rate of march different from that of the infantry to work into the relief table between infantry serials. If personnel only is relieved, the artillery columns will have the same rate of march as infantry. The columns will also be much shorter without guns and materiel. Only about 50 men per battery are with the firing

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batteries, the remainder being with the rear echelons or elsewhere.

On the other hand the plan of relieving personnel only is open to the objection that the new personnel will be unfamiliar with the mechanical and ballistic peculiarities of the old guns, and officers and men seldom have confidence in the firing data which have been worked out by others. It is understood that artillerymen always object to that kind of relief if it can possibly be avoided. On this occasion, the relief is to be made in one short summer night; the hostile infantry and artillery are very active; while roads are rather plentiful, the movement of so many troops in a short period renders the logistics difficult. Under the circumstances, the relief of artillery personnel only appears to be justified. It must be understood that this is an expedient which should not be used unless necessary.

Orders and relief tables are issued to carry out the relief according to the following general plan:

1. The four most direct roads from the bivouacs of the four infantry regiments to their positions within the sector are used for the infantry.

2. Companies of the brigade machine gun battalions are marched in the same serials with infantry battalions which occupy the same positions in the same sector.

3. Routes are arranged so that no infantry or machine gun column crosses the route of any other infantry or machine gun column within the sector.

4. Artillery units, as far as possible, are assigned entirely separate roads from the infantry. Their march is timed so that if all units make 2 miles per hour; if march discipline is perfect and no hitches occur, there will be no interference. If there is interference, it will be only a question of very small artillery units coming into contact with infantry and machine gun columns, and should not be at all serious. These small artillery units can be sent through intervals of the infantry columns if necessary.

5. The time for starting the march out of the sector is fixed for all units in rear of the battle position.

(a) For third line battalions, without waiting for relief.
(b) For second line battalions, at the time at which about half the relieving battalion has arrived.
(c) For machine gun units, according to the plan given in (b).
(d) For artillery units, about 1 hour after arrival of relieving batteries is due.
(e) For engineers and signal troops, when relieved.

The time for starting the march of units in outpost and battle positions is not fixed. The sending out of small elements immediately after relief is placed under the direction of infantry commanders of battalion centers of resistance, who are instructed

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not to start them until a certain hour fixed by the relief table. A separate hour is designated for each battalion center of resistance, at which time the road should be clear.

6. Field trains will not accompany units marching in. Such part of the field trains of the 1st Division as are in the sector will be sent out during the early part of the night.

The field order follows the usual form. An administrative order would of course be issued in the usual form. It would cover relief of trains, etc., including sanitary units.

Second Requirement:

4th Div
UNIONTOWN, MD.,
9 June 20, 11:00 AM.

FIELD ORDERS
No 20.

Maps: 1:62500, Taneytown sheet.
1:21120, Taneytown and Kingsdale sheets.

1. The enemy is holding a line along the western bank of MONOCACY RIVER. His harassing fire on the TANEYTOWN sector is severe. An enemy raid on the outpost line of the 1st Div 1 mile north of BRIDGEPORT early this morning was repulsed.
2. The 4th Div will relieve the 1st Div in line in the TANEYTOWN sector tonight. Relief will be carried out in accordance with attached march and relief table and will be completed by 5:00 AM, 10 June 20.
3. (a) Details of infantry reliefs will be arranged by the commanding officers concerned.
   (b) Relief of machine gun units in front line and battle position will be carried out under the instructions of commanders of infantry battalion centers of resistance, 1st Div.
   (c) Details of artillery relief will be arranged with CG, 1st FA Brig, by CG, 4th FA Brig, who will issue the necessary orders to carry it into effect.
   Relief of artillery units will consist of relief of personnel only, guns and material of 1st FA Brig being taken over in position. Reliefs of anti-tank guns will be carried out under the instructions of commanders of infantry battalion centers of resistance, 1st Div, in which guns are located.
   (d) Details of relief by 4th F Sig Bn, 4th Engrs, and 4th San Tn will be arranged by chiefs of services concerned.
   (e) 1st and 4th Obsn Sqs pass to command of CG, 4th Div, with command of TANEYTOWN sector.
   (x) 1. Command of infantry brigade sectors will pass at 4:00 AM, 10 June 20.
   2. Command of infantry regimental subsectors will pass at 4:00 AM, 10 June 20.
   3. All units of 4th Div within 1st Div sector will be under orders of the CG, 1st Div, until command has passed.
   4. Reliefs of elements of units of all arms within the limits of front line infantry battalion centers of resistance will be carried out under the direction of commanding officers of infantry battalion centers of resistance, 1st Div.
   5. Guides will meet all relieving columns at road crossings on NORTHERN CENTRAL Railroad. In the area east of that railroad, a distance of not less than 500 yards will be

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maintained between battalions or columns of equivalent length. In the area west of that railroad, the following precautions will be observed:
(a) Road crossings will be avoided by troops.
(b) Troops will maintain a distance of 50 yards between platoons.

6. Defense schemes, maps and surplus supplies will be taken over from units relieved.

4. Field trains of units of 4th Div will not enter the TANEYTOWN sector tonight. For administrative instructions and relief of trains, see Adm O No 45.

5. The CG, 4th Div, will assume command of the TANEYTOWN sector at 8:00 AM, 10 June 20.
Division headquarters will close at UNIONTOWN at 8:00 AM, 10 June 20, and will open at STUMPTOWN same date and hour.

B
Maj Gen.

Distribution:
1st Army
1st Corps
4th Div
Div Staff
1st Div
Adjacent Divs
7th Brig (4)
8th Brig (4)
4th FA Brig (4)
4th Engrs
4th F Sig Bn
10th MG Bn
CO Tns
MP Co
War Diary—File

Discussion of the Solution

When the corps telegram is received by the commanding general, 4th Division, the first thing that officer wants to know is what will be the most convenient distribution of his troops along Big Pipe Creek for the relief on the night of 9-10 June. A study of the map will show him the approximate distribution, especially if he knows the present general dispositions of the 1st Division, but a great deal depends upon the general plan of relief, and this is to be decided by the commander of the 1st Division. G-3, 4th Division, and probably the general or his chief of staff, would run up to 1st Division headquarters in a car, get there the general plan of relief, maps showing the present dispositions of the 1st Division and any other available information. The plans would be discussed, any points that could be decided at that time would be decided. On return to 4th Division headquarters, orders for the march to Big Pipe Creek would be issued, including instructions for advance parties to be sent up by motor truck.

Advance parties for the artillery should be particularly strong and would be ordered by the commander of the 4th

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Field Artillery Brigade. These advance parties, on arrival at battery positions, would familiarize themselves as thoroughly as possible with the firing data and with their duties in connection with the defense of the sector. They would include the following:

Brigade: Brigade commander, operations officer, intelligence officer, munitions officer, communication (telephone or radio) officer with noncommissioned officer assistant.
Regimental: Regimental commander, operations officer, reconnaissance officer, communication (telephone or radio) officer, with noncommissioned officer assistant, an officer and a noncommissioned officer assistant for each regimental observation post.
Battalion: Battalion commander, operations officer, reconnaissance officer, communication (telephone or radio) officer, with noncommissioned officer assistant, an officer and a noncommissioned officer assistant for each battalion observation post.
Battery: Battery commander, executive officer, a noncommissioned officer for each battery observation post, all chiefs of sections or corresponding gunners.
Also: Information officers from all units, an operator for each telephone and wireless station.

Accommodations available would limit the number of officers and men sent up. The above is considered as a minimum.

Advance parties for infantry and machine gun units would be ordered by the division commander and consist of the following:

Regimental: Commander and staff, intelligence personnel, pioneer officer, signal officer.
Battalion: Commander and staff, intelligence personnel, signal officer.
Company: One officer per company and one officer or noncommissioned officer per platoon.

Representatives of the different sections of the division staff would also move up at this time. The G2, in particular, would move his whole section up in order to have 24 hours to become thoroughly familiar with the enemy situation and have his division observers learn their sectors during daylight on the 9th.

Since these advance parties arrived 24 hours before the relief, the news of the relief may have reached some of the men who were captured in the enemy's raid this morning. It is assumed that due precautions were taken to keep the relief secret from the men in the front line, but it is by no

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means certain that the enemy is not already informed that the relief will take place.

For the relief itself, the problem of the 4th Division is more a problem in logistics than in tactics. The plan having been decided upon by the commanding general, 1st Division, the 4th Division has only to issue the necessary orders to carry out that plan. However, the commanding general, 4th Division, in issuing his orders and march table, must consider not only the question of having his units reach their positions as early as possible but also the question of having them arrive in the proper relative order to permit the outgoing units to get out according to plan.

The units are all bivouacked along the edge of the sector near the most direct roads to the positions they are to occupy in the sector. It was an important part of the plan for the march on the night of 8-9 June to send the units to bivouacs near these roads. Even with the best preliminary arrangements that can be made, it will be impossible for front line units to relieve those of the 1st Division in time for the latter to clear the sector before daylight.

The necessity for relieving the artillery on the same night as the infantry slightly delays the beginning of the march of the front line battalions and machine gun companies. The routes of march of many batteries cross the routes of the infantry. The question arises as to whether it is better to delay the march of the batteries long enough to permit the long columns of infantry which are marching to the battle position to pass, or to delay the long infantry columns, which have great distances to march, for a sufficient time to permit the short artillery columns to get out of the way. If the question as stated involved no other considerations, it would probably be better to make the artillery wait, but there are other considerations. The artillery having waited on the leading infantry battalions and machine gun companies, would be no better off than before, for there would immediately arise the same question with regard to the second line infantry battalions which cannot be kept waiting, for they must arrive in time to permit the second line battalions of the 1st Division to start back. These must get out of the way of elements of the first line battalions, some of which can be relieved very quickly. The

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batteries themselves require some time to take over and, unless they do it promptly, the outgoing batteries will be in the way of the outgoing infantry.

In view of all these considerations, it seems best to start the incoming artillery promptly at 8:00 o'clock, and get it out of the way of the incoming infantry. Then make battery reliefs promptly, and permit the 1st Division artillery to get out of the way of its first and second line infantry battalions. The delay caused to the infantry is short because the artillery columns are short and can move out promptly and clear their initial points at 8:00 PM.

Another solution of this difficulty would be to start them both at once and let the short artillery columns trust to getting through intervals in the infantry columns. In case of necessity this could be done, but it seems bad logistics to send deliberately one column, even a short one, to pass through another.

On the extreme left of the sector, both battalions of the 11th Light Artillery have to cross the route of march of the 1st Battalion, 16th Infantry. The 2d Battalion, 11th Light Artillery, also crosses the route of the 15th Infantry. In this case, the 1st Battalion of artillery is sent ahead of the infantry and the 2d Battalion behind it. This holds up for a short time the march of the 2d Battalion, 16th Infantry.

The plan adopted is therefore as follows:

1. Promptly at dark, start the march of those artillery units which go to forward positions (except the 2d Battalion, 11th Light Artillery, which has to cross the routes of two infantry regiments).
2. Start the march of the four front line battalions with attached machine gun units so that they will arrive at points of crossing just after the artillery has crossed.
3. Start the second line infantry battalions with proper distance to allow for the halts which the first line battalions have to make at the railroad to extend and take 50 yards between platoons.
4. March in the units of all arms which are to have positions in the rear part of the sector, giving them hours for starting which will not interfere with the march of other troops.
5. In each case, the relieving unit follows the same road going in that the corresponding outgoing unit will use coming out after relief.

This is only a general statement of the plan to which there are individual exceptions. To make the relief table requires tedious calculation of time and road spaces which is a matter of logistics and not of tactics.

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It is necessary to make these calculations and also to determine the approximate time of arrival of units at their positions for the benefit of the 1st Division whose march table is based on these data.

In actual practice there will be times when it will be impracticable to make all these calculations. In the present case the corps order was received early enough to permit a detailed relief and march table to be issued.

If the time available for getting out the order were too short to permit calculations to be made, the relief table would probably assign one road to the infantry and machine gun units of each regimental sector and leave the arrangement of order of march, etc., to regimental commanders. Orders for movement of artillery units would be left entirely to the commander of the artillery brigade. In such a case, the safety and smoothness of the relief would depend almost entirely upon the efficiency of traffic control by the military police.

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(G) INFANTRY DIVISION IN CORPS COUNTER-ATTACK

MAJOR R. MCCLEAVE,
Infantry

Maps: Pennsylvania-Maryland Geological Survey 1:62500, Taneytown and Emmitsburg quadrangles. Gettysburg-Antietam 1:21120, Kingsdale, Taneytown and Emmitsburg sheets.

General Situation:

The situation in the Taneytown sector as described in Chapter VI, D and F, will be continued here. The 4th Division holds the line. The 1st Division is occupying the second position. In order to permit the extension of the 2d Corps to the right, the right (north) boundary of the 1st Corps and 4th Division was shifted on night 11-12 June to include the line Piney Creek—Harney instead of Markers Mills—Longville as formerly.

On June 12th, a Red attack drove a salient across the Monocacy. This salient extended from the high ground south of Pine Hill Mill along the line Piney Creek Church north to crossroads 507—435—wooded creek to 522, thence to Monocacy River at hill 452. At 4:00 PM a Blue counter-attack by four battalions of infantry and two machine gun companies, supported by artillery, failed.

Special Situation (1st Blue Division):

The 1st Division is disposed along the second position from Markers Mill to north of Weishaars Mill as follows:

1st Brigade and 1st Light Artillery near Markers Mill.
1st Field Arti lery Brigade (less 2 regiments light artillery), 1st Engineers, 1st Field Signal Battalion, 1st Machine Gun Battalion, all west of Mayberry.
2d Brigade and 2d Light Artillery, north of Weishaars Mill, along the Taneytown Road.
1st Observation Squadron, landing field north of Mayberry.
Trains at Tyrone.
Division headquarters at Mayberry.

The general disposition of troops is such as to permit prompt deployment for battle on the second position or an advance toward Taneytown in several columns.

The division has been alerted and held on the afternoon of June 12th, in readiness for prompt movement.

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At 5:00 PM the following message from the commanding general, 1st Corps, is received:

> Counter-attack by 4th Division against the hostile salient north of LONGVILLE has failed. Move your division at nightfall to vicinity of LONGVILLE and attack at daylight in the general direction of LONGVILLE—HARNEY. Limiting roads—north: GALT—LAMBERT; south: TANEYTOWN—LONGVILLE (both inclusive). Army artillery south of TANEYTOWN will support your attack by concentrations on hostile lines north and south of ALLOWAY CREEK; corps artillery now in position NE of LAMBERT will concentrate on enemy west of PINEY CREEK CHURCH. Army artillery will maintain interdiction fire on HARNEY. All other details of attack at your discretion, with a view to driving enemy west of MONOCACY RIVER and reestablishing our position along the river.

The problem confronting Major General A, 1st Division, is a night march, deployment during the darkness, and attack at daylight in a given direction.

Discussion

General A is confronted initially with these requirements:

1. The forward concentration and development.
2. The plan of deployment.
3. Co-ordinated action with the 4th Division, and the corps and army artillery.
4. The plan of attack.
5. The execution of the attack.
6. The reestablishment of a defensive front facing the river.

The 1st Division is several miles from the battlefield. Normally the forward concentration would be effected by a simple march order, the battle order to be issued separately after the concentration is effected. In this case, as the forward march, deployment, and attack will form a continuous operation, one order covering the forward movement and plan of attack seems to have distinct advantage, in orienting all commanders from the start on the whole operation and permitting the fullest use of available time in preparation. The order will therefore provide for the development of the division from its present position and will contain the plan of action for the guidance of subordinate commanders charged with the deployment and actual attack. This is to be regarded as exceptional, and in accord with strictly local conditions of time, distance, and roads.

As the forward movement, deployment, and preparation are to be made in darkness, it is essential that the plan

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be simple, along direct lines, with absence of complicated maneuver. The conditions require penetration of a hastily intrenched line by concentration of effort. The salient is so small that any penetration will be effective, but as usual the bases will be most vulnerable. The enfilading effect of artillery and machine guns is indicated by the small size of the salient, this being a basic principle in attack of small salients. Such salients are inherently weak unless covered at the apex by a hill of sufficient size and height to prevent enfilade.

The plan of action must be closely related to the road system on which the troops move forward.

The northern group (1st Brigade and 1st Light Artillery) has a convenient road in the 578—545—B.M.—494—469—Longville road.

The southern group (2d Brigade and 2d Light Artillery) north of Weishaars Mill will naturally march via Taneytown and 436 on Longville.

A good central road between these two groups for the central one (divisional troops and 3d Heavy Artillery), would be ideal, but none exists that will not bring the column into collision with one of the other columns before the termination of the march. General A decides therefore to maintain the speed of action provided by several columns and to shift the northern group to the Galt—Lambert road.

He adopts as the center of gravity of the operation the line 491—Longville—Lambert, and proposes to shift this center of gravity forward on the line Longville—Harney as his general plan of action, crushing in the southern base of the salient and forcing its evacuation. There remains the planning of the greatest concentration of force for this purpose, in the simplest manner possible, with due consideration of terrain. The relative strength is of no importance in view of his mandatory orders. Also the more reserves the Reds throw forward into such a narrow salient, the greater losses they will suffer. It is a mistake to reenforce heavily a narrow salient. Unless it can be promptly widened by attacks not within the salient, but along the flanks of the main position outward from the basis of the salient, it had better be promptly evacuated for a salient is a source of weakness rather than strength.

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The terrain west of the line Longville—Piney Creek Church is much broken with woods and ravines, giving increased cover but adding to the difficulty of control. Full advantage must be taken of the Longville—Harney road as a control line and the main effort should be just west of this road.

The hostile line from Piney Creek Church to crossroads 507 is commanded by the Angel—Longville ridge, but the ground is very open, with an excellent hostile field of fire. Between the Lambert—crossroads 507 line and Alloway Creek the country is rolling and fairly open. The rolling country, however, will afford considerable cover as well as permitting overhead fire of position in support of an attack.

General A therefore decides as follows:

1. Boundary between brigades: the Longville—Harney road.
2. The 1st Brigade, with its left on this road but with main effort north of the Angel—507 road, to attack the front Piney Creek Church—Alloway Creek (both inclusive). Objective, first: the Harney—508 road, second: the Harney—452 road.
3. The 2d Brigade, with its right on the Longville—Harney road, to attack on a front of 1200 yards west from Piney Creek Church. Objective: The Pinehill Mill—Harney ridge. Reserve battalion to be echeloned to the left rear and to form a defensive flank as the brigade advances.
4. Artillery support: 1st Light Artillery to support 1st Brigade from position near Lambert.

2d Light Artillery to support 2d Brigade from position southeast of 532 (near Eckhardt).

3d Heavy Artillery to support the divisional attack from position along Piney Creek northwest of Taneytown, by concentrations as follows:

First by concentrations on woods west, northwest and southwest of Pine Hill Mill. Second: by concentrations on the ridges south of Harney in support of the 1st Brigade. Third: by concentrations northwest of Harney, into which area the defenders will be forced by successful attack.

The assistance to be afforded by corps and army artillery is specified in the corps order.

The divisional machine gun battalion to be placed near Angel for advantage of enfilade fire in support of 2d Brigade (to revert later to division reserve).

Division headquarters: farm house at 526.
1st Brigade headquarters: crossroads 535.
2d Brigade headquarters: crossroads 1 mile south of 513.

NOTE:—These are close up for prompt communication and control.

General A would in all probability have his brigade commanders with him awaiting orders in view of the "alert."

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He would normally give at once verbally the main points of the decision, and direct each to proceed at once for a personal reconnaissance of the ground during daylight, rejoining their commands before dark. Such an additional reconnaissance by subordinates as each might direct would be entirly normal. General A himself would then proceed to the front for a hasty reconnaissance and consultation with the commanding general, 4th Division.

This conference would be for the purpose of arranging matters with the 4th Division, and to obtain from its officers any valuable assistance they can give. The first element of assistance to assault units will be the added infantry fire power in obtaining superiority of fire. Secondly, the commanding general, 1st Division, can double his divisional artillery and machine gun support by obtaining cooperation from the organizations of the 4th Division, this support to be with reference to present location of units, but as far as convenient to be concentrated on the 2d Brigade sector. In addition, he must arrange for concentration of the reserve units of the 4th Division to clear the terrain and for holding these units strictly under control when leap-frogged by the assault units.

He would request the corps to direct a secondary and assisting attack against the north base of the salient and for the heavy artillery, infantry and machine guns of the 4th Division to fire along the entire corps front to mislead the enemy as far as possible, this being normal in prepared counter-attacks.

A warning order is sent to all units to be prepared to move forward at dark.

The formal orders issued by General A:

1st Div,
MAYBERRY, MD.,
12 June 20, 6:00 PM.

FIELD ORDERS }
No 20. }

Maps: 1:62500, Taneytown and Emmitsburg Quadrangles.
1:21120, Kingsdale, Taneytown and Emmitsburg Sheets.

1. The enemy occupies a salient east of the MONOCACY RIVER on the line PINE HILL MILL—PINEY CREEK CHURCH north to CR 507—CR 435 wooded creek to RJ 522 thence to MONOCACY River at hill 452. His position is not yet consolidated.

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2. This division will move forward at dark in three columns and will attack at daylight in the general direction LONGVILLE—HARNEY with a view to driving the enemy west of the MONOCACY RIVER. The attack will be heavily supported by fire of army and corps artillery, and by infantry, machine gun and artillery fire from units of the 4th Div.

Divisional objective: line PINE HILL MILL—HARNEY—CR 452, to be held defensively.

Line of departure: N and S road at LAMBERT—hill 567—LONGVILLE—hills 526—532; to be crossed by leading assault elements at 4:00 AM.

Boundary between brigades: The LONGVILLE—HARNEY road.

3. (a) The right column (1st Brig and 1st LA) will march via the GALT—LAMBERT road, head of main body clearing CR 626 at 8:30 PM. The 1st Brig deploying west of CR 535, will attack with its left on the brigade boundary, against the front PINEY CREEK CHURCH (excl)—ALLOWAY CREEK (excl), with main effort north of the ANGEL—507 road. Formation: discretionary. Objectives:

1st: The HARNEY—508 road.

2d: The HARNEY—452 road.

(b) The left column (2d Brig and 2d LA) will march via the TANEYTOWN—LONGVILLE road, the head of the main body to clear BIG PIPE CREEK at 8:30 PM.

The 2d Brig, deploying north of PINEY CREEK, with its right on the brigade boundary, will attack the front PINEY CREEK CHURCH (incl)—PINE HILL MILL (excl), with main effort on the right.

Formation: discretionary. Objective: The PINE HILL MILL—HARNEY ridge.

(c) The center column 1st FA Brig (less 1st and 2d LA), 1st Engrs, 1st F Sig Bn, 1st MG Bn, will march to assigned positions via the 578—545, B.M. 494—469, LONGVILLE road, the head of the main body to clear BIG PIPE CREEK at 8:30 PM.

(d) The attack will be preceded by a 30-minute artillery preparation.

The 1st LA will support the 1st Brig from position near LAMBERT.

The 2d LA will support the 2d Brig from position southeast of hill 532 (near ECKHARDT).

The 3d HvA will support the divisional attack from position southwest of RJ 526 (356.2—732.1).

1st: by concentration on woods, west, northeast and southwest of PINE HILL MILL.

2d: by concentrations south of HARNEY.

3d: by concentrations northwest of HARNEY, during the later stages of attack.

A smoke screen will be laid on hostile position at H—3 minutes.

(e) The 1st MG Bn from position near ANGEL will support the attack of the 2d Brig by a standing barrage on the hostile front lines near PINEY CREEK CHURCH from H—10 to H+6 minutes, reverting later to divisional reserve.

(f) One bn 2d Brig will remain under cover near CR 487 in divisional reserve.

(g) The divisional air service will maintain observation of the hostile salient and roads to the west, and will assist in artillery fire direction.

(x) 1. Column commanders are charged with local protection of columns.

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2. Brigade commanders will provide flank protection during the attack, and a mixed detachment of one platoon infantry and one section of machine guns from each brigade will follow the boundary between brigades.
3. Rear elements of the 4th Div will be concentrated before midnight, and front line elements will be leap-frogged by the 1st Div assault echelons.

4. SSW: RJ 513 (east of LONGVILLE).
See Adm O.

5. (a) Plan of signal communications: unchanged.
(b) Divisional axis: 526—513, LONGVILLE—HARNEY.
2d Brig: same as divisional.
1st Brig: LAMBERT—ANGEL—HARNEY.
(c) Command posts:
1st Div: Farm house at 526.
1st Brig: CR 535.
2d Brig: CR 1 mile S of 513.

A
Maj Gen.

Distribution:

CG	CO Tns
CS	1st F Sig Bn
Div Staff	4th Div
1st Brig	1st Corps
2d Brig	1st MG Bn
1st FA Brig	1st Engrs
1st Obsn Sq	APM

The situation given in this problem is to be considered as exceptional in that the counter-attacking division is given the independent mission, instead of the normal procedure of coming under the command of the division occupying the front, in this problem the 4th Division. In this case the 1st Division had formerly occupied the same ground, and had been relieved by the 4th Division, so that the general terrain is familiar to the troops. The normal procedure, however, would be for the 1st Division to be ordered to reinforce the 4th Division, the command of the combined force remaining with the commanding general, 4th Division, regardless of relative rank, until the termination of the counter-attack. This was the result of experience in the World War, doubtless based on familiarity with local conditions and terrain which might well be almost unknown to the reinforcing division; but in this problem the previous occupation of this sector by the 1st Division obviates the necessity of the mixed command, and is believed preferable. It is necessary, however, to emphasize the normal procedure that the command remains with the commander of the occupying division until the termination of the counter-attack, when orders from higher authority would redispose the forces.

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One additional point to be noted is that in the forward march of the division, the artillery should be well to the front of each column, and General A, without encumbering his order with the aditional instructions, would caution the brigade commanders during the conference to see that this is done.

In conclusion, in a counter-attack against a large salient by a powerful force the attack may well be unlimited in objectives. If the attacking force is markedly inferior to the reserves which may be massed against it, there must be a limited objective only. Especially is this the case in a counter-attack by a comparatively small force against a small salient, in which continuation of the attack, without supporting attack all along the line, may well result in driving into the enemy's line a small salient in turn, with the usual attendant danger and weakness. The objectives then in a small counter-attack are to be selected with a view to ejecting the enemy and re-establishing the defense lines rather than of following the enemy up into his own lines. It was with this principle in mind that the brigade objectives were selected in this problem.

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(H) MAP PROBLEM—THE INFANTRY DIVISION IN CORPS DEFENSE

CAPTAIN FAY W. BRABSON,
Infantry

Maps: General Map, Vicinity of Leavenworth 1″=15 miles. Fort Leavenworth and Vicinity, 1:21120 Leavenworth, Lansing, Easton and Boling Sheets.

General Situation:

Missouri (Blue) and Kansas (Red) are at war. A Red army is concentrating at Topeka. Red detachments are guarding the crossings of the Missouri River, north and south of Leavenworth. The 1st Blue Army has completed its concentration at Plattsburg, Missouri, and has sent the 1st Corps, consisting of four combat divisions and corps troops, to seize the crossings of the Missouri River in the vicinity of Leavenworth and cover the advance of the 1st Blue Army against the 1st Red Army.

Special Situation:

On 2 June 20, the 1st Blue Corps, organized and disposed as per attached table, has forced the crossings of the Missouri River and has advanced to the line of the Big Stranger Creek. The Red forces immediately opposing the 1st Blue Corps have fallen back slowly. The forces are in contact along the Big Stranger Creek. The defense offered in front of the 2d Blue Division has been strong. Some Red forces still retain a foothold east of Big Stranger Creek in the northern zone of action of the 2d Blue Division.

At 1:30 PM 2 June 20, General A, commanding the 1st Blue Division, received a copy of Field Orders No. 11, 1st Blue Corps, at R. Mayer house (335.2—751.0).

EXTRACT

1. The 1st Red Army has advanced to the east of GRASSHOPPER CREEK. Our army commences crossing the MISSOURI RIVER tonight; the 2d corps advancing to BIG STRANGER CREEK in the zone immediately south of 1st Corps.
2. Pursuant to army orders this corps will organize a defensive zone as follows:
   (a) Zone of Defense.
   North and south boundaries: same as zone of advance.
   East boundaries: north and south line through FRENCHMAN.

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ORGANIZATION AND DISPOSITION TABLE
1ST BLUE ARMY CORPS—2 JUNE 20

1. *Units*	2. *Zones of Action*	3. *Disposition of Corps*	*Disposition of Divisions*	*Remarks*
Front line given in order of battle from North to South.				
1st Corps Corps Troops. 2d Div. 1st Div. 3d Div. 4th Div. (Reserve)	*North Boundary* X Co-ordinate 756.0 *South Boundary* X Co-ordinate 742.5 *East Boundary* MISSOURI RIVER *Supply* U. P. A. T. & S. F. } R. Rs	Corps Troops (less dets.) complete concentration in vicinity of FRENCHMANS at 6:00 P.M. 2d June 20.	In 1st line: Three divisions in line. In Reserve: One division concentrating at FRENCHMAN.	No training division and no replacement division in this corps.
2d Div.	*North Boundary* Same as North Boundary 1st Corps. *South Boundary* X Co-ordinate 752.0	• • •	In 1st line: Two brigades in line.	
1st Div.	*North Boundary* X Co-ordinate 752.0 *South Boundary* ZIMMERMAN ROAD—MOUNT OLIVET S. H.—Point 334.7—747.7—thence along CRAMER CREEK to Junction—thence due west to HILL 1084. (all incl.)	One bn 4.7" guns and one bn 6" guns (corps artillery) support 1st Div.	In 1st line: Two brigades in line.	
3d Div.	*North Boundary* Same as South Boundary 1st Div. *South Boundary* X Co-ordinate 742.5	• • •	In 1st line: Two brigades in line.	
Corps Cav.	Operating to the South towards TOPEKA.			

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(b) Position.

A battle position on the eastern slope of and covering BIG STRANGER CREEK valley.

An intermediate position on the general line of the north and south road through KEARNEY—1082—1098—BOURKE—1107.

A switch position running northeast through LOWEMONT ridge.

A second position along the line: hill 1004—hill 1044—hill 1047—hill 1028—hill 1071—hill 1081.

(c) Sectors.

LOWEMONT Sector: same as present boundary 2d Div.
EASTON Sector: same as present boundary 1st Div.
CRAMER Sector: same as present boundary 3d Div.

3. (a) The 1st Division will organize and defend the EASTON sector.
(b) One battalion 4.7 guns and one battalion 6" guns (Corps Artillery) will support the 1st Division. * * *
(c) The 4th Division will organize the second position.

* * * * * * *

(x) CONDUCT OF DEFENSE.

(a) The battle position will be held and all available forces employed for that purpose.

The intermediate position will protect the artillery in the event of the penetration of the battle position.

The second position will not be occupied except on order from these headquarters.

The switch position through LOWEMONT ridge will secure continuity of defense in case of a penetration of 2d Division sector or the envelopment of its right flank.

(b) Divisions will cover their respective battle positions with suitable outposts. Aggressive reconnaissance will be maintained west of BIG STRANGER CREEK.

Determination of junction points of the several positions will be made after joint reconnaissance of division commanders. (See note at end.)

Divisions will employ not to exceed one-half their available strength of infantry and machine guns for the defense of their respective sectors. The remaining infantry and machine guns will be held in rear of the intermediate position with a view to their employment primarily upon the switch position. On corps orders they may be employed in counter-attacks.

Connecting groups will be maintained along division boundaries, at the junctions of important lines of the several positions organized.

(c) In case of a surprise attack all troops will fight to the last without yielding ground. In case of a foreseen general attack all troops at the disposal of division commanders will be used to hold the battle position at all costs.

In case of alarm, corps reserves and corps troops having no assigned function will hold themselves in readiness in present positions.

(d) The divisional artillery of each first line division will be prepared to lay down protective barrages and counter preparation fire along its entire front.

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4. See administrative order.
5. (a) Plan of signal communications: no change.
(b) Axes of signal communications—

* * * * * * * * * * *

1st Div: HUND STA.—921—MEAGHER.

* * * * * * * * * * *

(c) Command posts:
1st Corps: FRENCHMAN.
2d Div: LOWEMONT.
3d Div. * * *
1st Div: MEAGHER HOUSE.

* * * * * * * * * * *

Required:

The formal field orders issued by Major General A, 1st Division.

NOTE FOR STUDENT: Student will make an assumption as a result of conference.

An Approved Solution

CAPTAIN FAY W. BRABSON,
Infantry

First Requirement:

1st Div,
MEAGHER House,
2 June 20, 4:30 PM.

FIELD ORDERS
No 11.

Maps: General Map, Vicinity of Leavenworth 1"=15 miles; 1:21120, Leavenworth and Easton Sheets.

1. The Red forces immediately opposing our corps have been driven back to BIG STRANGER CREEK.
The rest of our army begins crossing the MISSOURI river tonight.
The 1st Blue Corps will organize a defensive zone within corps zone of action. No change in adjacent divisions.
2. (a) This division will organize and defend the EASTON sector.
North boundary: X co-ordinates 752.0.
South boundary: ZIMMERMAN road—MT OLIVET S. H.—334 7—747.7—thence along CRAMER CREEK to junction—thence due west to hill 1084 (all inclusive).
East boundary: Y co-ordinates 341.0.

(b) POSITIONS:

A battle position with the main line of resistance on the line: 333.0—752.0, 332.9—751.2, 332.1—750.6, 332.4—749.3—332.6—747.8: with the regimental reserve line along: hill 1061—house at 333.2—750.2, road bend 1057, hill 1084, 333.3—748.0.

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An intermediate position with the line of resistance: CAMPAIGN—MARTIN—hill 1147—MEAGHER—ST. JOSEPH'S CHURCH—J. MCNAMEE house.

A switch position along the line: LOWEMONT Ridge—hill 1109—hill 1061—battle position.

(c). SUBSECTORS:

North Subsector.

South Subsector.

Boundary line between subsectors:

FLOOREY—336.8—750.2, J. HEITZELIN—332.0—750.1 (all inclusive) to north subsector.

3. (a) The 1st Brig (with two cos 1st Engrs) will organize and defend the two subsectors. It will relieve the 2d Brig by 2:00 AM, 3 June 20. One regiment (less reserves indicated) and one co 1st Engrs will organize and defend each subsector.

The CG 1st Brig will co-operate with the CG 2d Div on the north in selecting and organizing the switch position, on the general line LOWEMONT Ridge—hill 1061—DUNCAN—J. ACKLER.

(b) The bulk of the machine guns 1st Brig, generally placed not further to the rear than the battalion reserve line, will have as their mission the placing of effective barrages in front of the firing line of the battle position.

The 1st MG Bn will reconnoiter and prepare positions on the intermediate positions.

The machine gun companies of the 2d Brig will reconnoiter and prepare positions not further forward than the regimental reserve line of the battle position.

The machine gun companies of the 2d Brig and the 1st MG Bn will reconnoiter and prepare positions for the defense of the switch position from the A.T. & S.F. R.R. to the junction of switch position with battle position.

The division machine gun officer by arrangement with the 3d Div on the south will assure the covering by machine gun fire of CRAMER CREEK Valley.

(c) 1st FA Brig will support the sector; 1st LA the north subsector, 2d LA the south subsector.

Plans will be submitted for covering the battle position and switch position with protective barrages and counter-preparation fire. Plans will include the necessary displacement of the artillery to cover the switch position in case of penetration.

One Bn 4.7″ guns and one Bn 6″ guns, corps artillery, will support the 1st Div. (See artillery annex.)

(d) The 2d Brig and the 1st MG Bn will constitute the divisional reserve.

The 2d Brig upon relief by 1st Brig will withdraw to orchard near V. PAYUER and to wooded ravine to the east.

The 1st MG Bn to orchard north of MEAGHER.

These troops will be employed in organizing the intermediate position.

When alerted the divisional reserves will assemble in respective camps ready to move.

(e) The 1st Obsn Sq from the landing field at FORT LEAVENWORTH will make reconnaissance daily during the hours of daylight, of enemy positions opposite the front of 1st Div to a depth of 5 miles. (See A. S. Annex.)

(f) The Div Engr O after consultation with regimental subsector commanders will insure the maintenance of the necessary bridges across BUCHANAN CREEK and CRAMER CREEK; and,

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after consultation with the artillery brigade commander, will arrange to attach any troops necessary for displacing the artillery to cover the switch position.

(x) CONDUCT OF DEFENSE:

1. The battle position will be held at all hazards. The reserves available to regimental subsector commanders will be held mobile and will be used in counter-attacks and to maintain the line of resistance.

The intermediate position covers the artillery and forms the base of departure for counter-attacks by the main reserves. The switch position will be used for the purpose of preventing any hostile penetration on our right flank.

2. In each subsector two battalions will be employed on the battle position, organizing two centers of resistance. Each battalion will establish outguards along the west bank of the BIG STRANGER CREEK. Aggressive and strong reconnaissance will be made west of BIG STRANGER CREEK.

In each subsector two companies will be located on the regimental reserve line.

The north and south subsectors will hold in reserve two companies in wooded ravines to the north of KRUETZER and just east of H. MEYER respectively. These troops will be available for work on the battle position.

Mutual support between subsectors will be assured by proper connecting groups. Connecting groups each consisting of at least one section of infantry and one machine gun section, will be maintained at point 333.0-752.0, at point 334.0-752.0 (hill 1061) and point 337.3-752.0 (intermediate position) for connection with 2d Div on north. Similar groups will be located at point 332.5-747.7 at point 333.3-748.0 and at hill at point 336.8-747.5 (intermediate position) for connection with 3d Div on the south.

3. CONDUCT IN CASE OF ATTACK:

(a) In case of a surprise attack all troops including the outpost will fight to the last without yielding ground; in case of a foreseen general attack all troops at the disposal of each subsector commander will be used to hold the battle position at all cost and outpost troops will be withdrawn on orders of the brigade commander.

(b) In case of alarm division reserves will hold themselves in readiness in present positions.

4. Counter-attacks will be launched by battalion and higher commanders to insure possession of the battle position.

5. Barrages by machine guns and artillery will be placed in front of the battle position and counter-preparation fire in ravines and most probable localities for counter-attack in accordance with artillery and machine gun plans to be issued later and upon call by proper commanders. The commander of the artillery brigade will detach sufficient guns to protect with direct fire those portions of the front from which tank attacks are practicable.

Planes will be placed at the disposal of the artillery on call.

6. The positions will be organized in the following order of priority:

1st. Battle position.

2d. Intermediate and switch position at the same time.

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3d. Communications between above positions.
The switch position will be outlined but not completed until further orders. (See plan of organization of the ground.)

4. (See Administrative Order) SSW FLOOREY.
5. (a) See Plan of Signal Communications.
(b) Axes of signal communications.
Div: HUND STA.—921—MEAGHER.
1st Brig: MEAGHER House—GRANDVIEW S. H.—W. MEYER.
(c) Command post:
1st Div: MEAGHER.
1st Brig: W. MEYER House.
2d Brig: V. PAYUER House.
Supporting Arty (Corps): HILDEBRAND.

A
Maj Gen.

Distribution:
Div Staff
1st Engrs
1st MG Bn
1st F Sig Bn
CO Tns
1st Brig
2d Brig
1st FA Brig
Regimental Commanders
CO Supporting Arty (Corps)
1st Army
1st Corps
2d Div
3d Div
4th Div

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CHAPTER VII

Delaying Action, Withdrawals, Raids, Convoys and Position in Readiness

(A) A DELAYING ACTION

CAPTAIN WALTER C. SHORT,
Infantry

Map: Pennsylvania-Maryland Geological Survey Map, 1:62500. Gettysburg, Fairfield, Emmitsburg, Taneytown and Ijamsville Quadrangles.

General Situation:

Pennsylvania (Blue) and Maryland (Red) are at war.

The 1st Blue Army, having invaded Maryland, was stopped by a superior Red force and, on 1 September 1919, took up a defensive position north of Double Pipe Creek, Big Pipe Creek, and Silver Run. It is holding the heights north of the above creeks from the Monocacy River on the west to include the Baltimore—Gettysburg turnpike on the east. The Blue army cavalry is covering the South Mountains and country to the west.

Special Situation (Blue):

The 1st Blue Division with 1st Squadron, 1st Cavalry, on 1 September 1919, was sent forward to the line Creagerstown—Jimtown to protect the right of the 1st Army and to prevent the advance of the enemy between the Monocacy River and the mountains. The division took up a position in readiness with the 1st Brigade in the vicinity of Jimtown, and the 2d Brigade in the vicinity of Creagerstown. The 1st Light Artillery was along the road just northwest of Graceham, the 2d Light Artillery in the vicinity of Loys and the 3d Heavy Artillery east of Graceham.

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The 1st Engineers, the 1st Machine Gun Battalion (motorized) and 1st Field Signal Battalion were at Hoover's Mill as was also division headquarters. The division trains were at Motters. The 1st Observation Squadron was with the army air park in the vicinity of Barlow. The 1st Squadron, 1st Cavalry, was in observation toward Lewistown and Frederick, with orders to withdraw to Martin's Mill at night, leaving a small detachment with the outposts. The outposts, consisting of one battalion of infantry and one machine gun company from each brigade, extended along Hunting Creek.

At 11:00 AM, September 2, 1919, General A, commanding 1st Division, received a message from his cavalry that Red troops were detraining continuously at Lewistown; that his patrols, attempting to approach Frederick about 9:00 AM, had been driven back by Red cavalry; that patrols had learned from a civilian that the Red troops had been arriving continuously at Lewistown and Frederick since the morning of September 1, 1919.

At 7:00 PM, September 2, 1919, General A received the following message from General X, commanding 1st Blue Army:

1st Army,
GETTYSBURG,
2 Sept 19, 6:00 PM.

CG, 1st Div:

Enemy in our front has been strongly reinforced. Reliable information that the 5th Red Corps, consisting of 9th and 10th Divisions, is now detraining at LEWISTOWN, WALKERSVILLE and FREDERICK. Airplane reports columns of artillery and trains north of FREDERICK at 2:00 PM.

The 1st Army will withdraw from its present position and defend the line ROUND TOP—CR 491—GERMANTOWN—ST. LUKES CHURCH. The withdrawal will begin at 7:00 PM.

You will fall back toward MCCLEARY SCHOOL delaying the advance of the enemy between the MONOCACY RIVER and the mountains and holding him south of EMMITSBURG until 11:00 AM, Sept 4th. The 2d Div will delay the enemy east of the MONOCACY, holding him south of HARNEY until 11:00 AM, Sept 4th. The army cavalry will cover your right flank west of the mountains.

X,
General.

Required:

(a) General A's estimate of the situation.

(b) Orders actually issued by General A.

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General A's Mission

General A's orders are quite specific. They direct him to fall back toward McCleary School, and to delay the advance of the enemy between the Monocacy and the mountains, holding him south of Emmitsburg until 11:00 AM, September 4th, even should it become necessary to sacrifice his division. The safety of the 1st Army may depend absolutely on his delaying the enemy until the hour specified. The hour at which General A will start his withdrawal and the position or positions at which he will delay the enemy, with the amount of resistance to be offered at each, are to be determined by General A. His orders have not restricted him in any way in regard to these questions.

The Enemy

General A has reliable information that a corps of two divisions has been sent against him, but he has no definite information as to the number of troops that have actually arrived. The enemy has excellent railroad facilities to Frederick and will probably be able to bring a corps of two divisions to that point within forty-eight hours from the arrival of the first troop train. From Frederick to Walkersville and Lewistown he has only single track railroads. By utilizing these railroads for his infantry and machine guns and sending his artillery and trains from Frederick Junction by marching, he can have the greater part of his troops facing General A at Hunting Creek on the morning of the 3d. After the enemy has pushed forward covering detachments he may change his advanced detraining points from Walkersville and Lewistown to Woodsboro and Catoctin. Changing the detraining point to Woodsboro would enable the enemy to concentrate troops on General A's left much more rapidly. The report of columns of artillery on the road north of Frederick at 2:00 PM indicates that the enemy is moving his artillery and trains forward from Frederick by marching. There are two main highways directly north to Lewistown and Utica Mills, while a third, only a little longer, is available by the way of Indian Springs and Charlesville. The motor transportation could be moved by the way of Yellow Springs. The roads which would be

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employed by the artillery vary from 8 to 10 miles between Frederick and Lewistown and Utica Mills. Two miles more marching would be necessary to place this artillery in position. The enemy is in friendly country, so he will have no difficulty in obtaining good guides which would make the night march thoroughly practicable. The roads at this time of the year are in excellent condition so there should be no unusual delays. There seems little doubt that the enemy will be able to concentrate the greater part of his troops south of Hunting Creek during the night and place them in line ready to attack at daylight on the 3d.

All indications point to an attack by the main force of the enemy on the morning of the 3d with an attempt to envelop the Blue right by the advance of the Red force between the Monocacy and the mountains. If the enemy does not discover the Blue retirement tonight, he surely will discover it early tomorrow morning and begin a vigorous pursuit. The Red corps opposing General A can therefore be expected to act very aggressively. General A thus has every reason to expect a vigorous attack by superior numbers at daylight on the 3d, and that before the night of the 3d the Red corps will be able to exert its full force against him.

His Own Forces

General A has his division complete and, in addition, a squadron of cavalry which should be extremely valuable to him in a delaying action where early information is so important. It will be of special importance to him just at daybreak before conditions are good for aerial observation.

General A's forces are in a position of readiness where they can be quickly moved into a defensive position on the line now held, or can be readily moved to the rear if it is decided not to hold the Jimtown—Creagerstown position.

General A can expect no assistance from the Blue army except the support of the 2d Division, on the east of the Monocacy, which also has the mission of delaying the enemy. Later in the day he can expect this division to protect his left flank but at the outset he can expect no support from it. Until the division has retired to the north as far as Double.

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Pipe Creek, he will have to protect his left flank himself, since it will be in advance of the 2d Division.

Plans of Action

Two general plans are open to General A, each of which might be solved in more than one way:

1. General A might make a stubborn defense at one position, delaying the enemy at this place the total amount of time that it is necessary to delay him to prevent his reaching Emmitsburg before 11:00 AM, September 4th.
2. General A might take up a series of positions so delaying the enemy at each that the total delay will prevent his reaching Emmitsburg before 11:00 AM, September 4th.

Plan No. 1.—If Plan No. 1 is adopted, General A must hold the position chosen, regardless of the risks and losses involved, until such a time that the enemy cannot reach Emmitsburg before 11:00 AM, September 4th. The hour until which he would have to hold the position would depend upon the position chosen by him for this stubborn defense.

In a delaying action of this class, where time must be gained even at the risk of sacrificing the delaying force, development of effective fire at long and effective ranges is an important element. But the close ranges must also afford a good field of fire. Artillery and machine guns remain in action, even at the risk of total loss, as long as there is a target at which to fire. The position selected must not only possess all of the elements of a good defensive position, but, to a greater degree, the ground in rear of the position should favor the withdrawal of the first line by screening the troops from the enemy's view and fire as soon as the position is vacated.

Where only one suitable position is available, this form of delaying action should be adopted. Where the distance over which the enemy may be permitted to advance is so limited that any second position chosen would be in such a close proximity to the first that troops withdrawing from it would not have sufficient time to occupy properly the second; then the resistance offered to the enemy should be made at one position.

When the time that the enemy must be delayed is so short that there can be little question of being able to delay him the entire time in one position, without becom-

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ing seriously engaged; the resistance should be offered in one position. To occupy additional positions unnecessarily is to run the risk of the troops getting out of hand and being defeated.

Where a strong frontal position exists that cannot be turned, it may frequently be more advantageous to hold such a position the entire time than to offer resistance in a number of less strong positions.

None of these conditions exists in this case. The total distance that the enemy may be permitted to advance north of Hunting Creek is about ten miles. There are at least three suitable positions for delaying the enemy:

(a) The high ground to the north of Owen's Creek from Rocky Ridge to hill 447 and along the ridge to the northwest.
(b) The high ground north of Beaver Branch from the hill 1200 yards northeast of Appolds to hill 443 and then to hill 478.
(c) The line Hoffman Hill—hill 1 mile southwest of Hoffman Hill—hill northeast of crossroads 488—Emmitsburg—hill 496—hill 544.

These three positions are such distances apart that troops withdrawing from one would have sufficient time to occupy the next deliberately.

Obviously, then, this case is not one in which the total delay should be made at one position. To do so would be taking unnecessary risk of involving the command in a decisive fight, which might be avoided. The command might thus be sacrificed unnecessarily.

Plan No. 2.—If it is decided to delay the enemy at a series of positions, at each position, the advance of the enemy should be delayed as long as possible without imperiling the safe withdrawal of the command. Only at the last suitable position might it become necessary to hold regardless of the risk and losses involved. In an action of this character the command might accomplish its mission without becoming involved in a serious engagement. This is what is most to be desired by General A.

In delaying actions of this class, the firing line is made as strong as possible from the beginning. Supports and reserves are reduced to a minimum. A clear field of fire at the long and effective ranges is most important, as the enemy must be brought under as heavy a fire as possible as soon as he comes within range. The terrain should be

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such as to give ease of withdrawal from the position. A clear field of fire at close ranges is not necessary. As soon as the enemy comes within close range, the position is vacated, machine guns, artillery and mounted troops delaying the advance of the enemy's lines up to the last minute that permits of the safe withdrawal. (Par. 217, F.S.R.)

Since in all delaying actions the governing idea is to gain as much time as possible before the enemy can come within close range, the position taken up should be such as will not afford cover to the attacker up to the close or nearer effective ranges. Open ground to the front is desirable, in order that the enemy may be obliged to make an early and wide deployment before advancing to the attack. A maximum extent of the firing line is useful for this purpose. Supports and reserves are held well to the rear. Obstacles, natural or constructed, that impede the enemy are desirable. Defiles that cannot be readily turned offer good opportunities for delaying action. (Par. 219, F.S.R.)

The maximum amount of time should be gained by forcing the enemy to deploy and then take up a march formation. The minimum time should be gained by hard fighting.

A delaying action in a number of positions becomes a series of co-ordinated withdrawals. The occupation of successive positions will involve the moving of the different elements of the command by echelon. Only the changes of the command from one main position to another main position will ordinarily call for the movement of the artillery. The infantry and machine guns, however, will frequently move in smaller jumps, but always by echelon, and will delay the enemy at favorable points between the main positions. At the main positions the covering echelon becomes a separate and well organized force.

In all withdrawals, whether from main positions or secondary ones, the withdrawing echelon should withdraw to the flank of the troops in position.

The withdrawals from the main positions will be made only on the order of the supreme commander; the withdrawals from secondary positions, however, will usually be made on the order of local commanders. All withdrawals should be preceded by proper reconnaissance. Whether the commanding officer of the unit would make his

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reconnaissance or delegate the duty to a staff officer would depend entirely on conditions.

While the covering force should comprise all arms, the long range and effectiveness of artillery and machine guns make these arms invaluable in delaying an enemy and gaining time. The cavalry, machine guns and artillery should form the screen under cover of which their infantry throws off the enemy and takes up its march formation. Some infantry is needed in the covering force for the immediate protection of the other arms. The length of time that the covering position has to be held will determine the proportion of infantry to other arms which is required.

The long range and wide radius of fire of the artillery make this arm invaluable in protecting the flanks and preventing a rapid advance by hostile batteries. This delay in the advance of the enemy's batteries affords our infantry the opportunity to withdraw, which is necessary in the occupation of successive positions.

The position of the artillery in the next successive position to the rear should be within effective range of the old position, or of the first position from which the enemy's artillery can fire on the withdrawing infantry and machine guns. The maximum effective fire will be about 8,000 meters. While the artillery of the next position must not be too far to the rear it is also important that it should not be too close, as an early change will be necessary, and too much of the time of the artillery will be employed in moving. As a rule, in occupying successive positions it will not be profitable to move artillery less than 3,000 meters. It would appear, therefore, that in a properly co-ordinated delaying action successive positions should not be separated by less than 3,000 meters, nor by more than 8,000 meters, if the maximum use is to be made of the artillery; and that a distance of 5,000 to 6,000 meters between positions would be the most desirable in order to permit the placing of the artillery at the proper distance in rear of the line of resistance.

The characteristic features of a delaying action are great frontage, large expenditure of ammunition, and long range fire, but at the same time there must be a few rifles in order to deceive the enemy as to the strength of the

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force. No other arm is so valuable as the machine gun in a delaying action. With a small escort to afford immediate protection to the machine guns, they will many times be able to offer all the resistance that is necessary to cause the enemy to make a complete deployment, and they may even hold him up for hours. Economy of men and ammunition demands that the maximum use be made of machine guns and that the bulk of the infantry be deployed only after it is evident that the enemy cannot be stopped by machine gun fire alone.

The chief role of the cavalry will be the obtaining of early information of the enemy's dispositions and the protection of the flanks. However, its great mobility makes it the best escort for machine guns furnishing the final resistance in any position. Under such conditions its function is to guard the machine guns rather than inflict damage on the enemy. It would be held in such a position as to best afford them protection and would be employed only when necessary for their protection, or when an unusual opportunity for mounted action was presented.

Tanks are extremely valuable in delaying actions for use in local counter-attacks. Where the enemy has pressed forward rapidly at a point that is of particular advantage to him, there is no weapon so well suited to retake the ground immediately before he has gotten a secure footing. Such counter-attacks will rapidly cure the enemy of his impetuousness.

The observation squadron may be of considerable value by attacking the ground troops. It is not so much the material results produced on the enemy by such attacks, as the detrimental effects on his morale.

A division carrying out a delaying action in a series of successive positions may be employed in several ways:

(1) The entire division may be employed in one echelon, moving as a whole from position to position. This method will seldom be practicable except when the withdrawal from a position can be made under cover of darkness. Where a division has to delay an enemy for several days with the main positions so far apart that the artillery of the rear position could not bring the enemy's artillery under fire when it reached the old position, this method might be employed. In such a case the move from each main position to the next would be made under cover of darkness, with small forces left in secondary positions to offer slight resistance.

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(2) One infantry brigade with half of the artillery may occupy the first position, while the other brigade with the remainder of the artillery occupies the next position. The brigades would thus continue to pass through each other and occupy successive alternate positions. Where only one road to the rear is available and the country so wooded or rugged as to make moving off the roads impossible or extremely difficult, this method might well be employed. It will avoid serious mixing of units on one road which might otherwise occur.

(3) Each infantry brigade may be given a zone of action and may have certain artillery units assigned to it, or detailed to support it. Each brigade could thus use its infantry regiments to occupy alternately successive positions, assigning such machine guns to regiments as the situation demanded. Where two or more roads are available, this will be the method of occupying successive positions since it greatly facilitates withdrawal, and insures continuity of command.

(4) Where the front to be held is very extended and sufficient roads are available, it may be advantageous to assign zones of action to regiments. The regiments would then occupy positions by alternate battalions.

Whatever method of occupying a position is employed, the withdrawal to the next position in rear will be made on the orders of the supreme commander.

An examination of the map by General A shows to him that there are four general positions that should be considered as possible delaying positions:

(a) The line that he is now holding from Jimtown to Creagerstown.

(b) The high ground to the north of Owen's Creek from Rocky Ridge to hill 447 and along the ridge to the northwest.

(c) The high ground north of Beaver Branch from the hill 1,200 yards northeast of Appolds to hill 443 and then to hill 478.

(d) The line Hoffman Hill—hill 1 mile southwest of Hoffman Hill—hill northeast of crossroads 488—Emmitsburg—hill 496—hill 544.

The Jimtown—Creagerstown line, which he is now holding, has many advantages as a first position in which to delay the enemy. It is suitable in extent, having a frontage of about 5,000 yards. It has an excellent field of fire with an obstacle in its front. It has excellent observation posts and good artillery positions. Its right flank is protected by the mountains while on its left flank the Monocacy offers a serious obstacle to the enemy's advance. There are excellent roads leading to the rear. The ground immediately in rear favors withdrawal. The troops are in such a position that they could readily occupy the position and be ready for the enemy should he attack at daybreak. The position has, however, serious disadvantages which more than out-

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weigh its advantages. A short distance in rear of it is Owen's Creek, which is the most serious obstacle south of Tom's Creek. Should General A be driven back on this and pushed vigorously it might be disastrous for him. General A's present position is well in advance of the general line of the Blue army along Double Pipe Creek and Big Pipe Creek. The delaying action of the 2d Division will not be south of Pipe Creek. This leaves General A without any support on his left flank south of that point. The Monocacy is a serious obstacle to any turning movement of the enemy, but there are several crossings between Creagerstown and the mouth of Double Pipe Creek. Should General A remain for any great length of time in his present position, he might be cut off. General A is in enemy territory. It is therefore safe to assume that the enemy will have information of General A's position and will be able to determine the line that would be held by General A should he take up a defensive position on his present line. The enemy could therefore bring up his troops under cover of darkness and launch his attack under favorable conditions. Should General A, however, take up a position farther to the rear, he would have an opportunity to get some information of the enemy's disposition during the advance after daylight. While it will be possible for the enemy to launch an attack from the south of Hunting Creek at daybreak, it will be impossible for him to form up his troops for attack north of that point as long as we maintain covering detachments along the creek.

The position north of Owen's Creek possesses all of the advantages of the present position for delaying the enemy, and none of its disadvantages. The only disadvantage, as compared with the present position, is that it may permit the enemy to advance three miles without serious resistance.

The position north of Beaver Branch is excellent in every way as a position in which to delay the enemy.

The position north of Emmitsburg cannot be used for such a stubborn defense as can the other two positions. Its frontage is about 10,000 yards which is too great for a defensive position, but suitable for a delaying action. Its

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left flank can be turned, although Hoffman Hill and Marsh Creek make this operation extremely difficult. The position permits the enemy to get too close to Emmitsburg to make it the most suitable one for a long delaying action.

It appears probable that the enemy will advance his troops to the line of Hunting Creek tonight. This is the most unfavorable assumption for General A and the one that he should make in determining the time that he will have to delay the enemy between his present position and Emmitsburg. From Hunting Creek to the position north of Owen's Creek is about 6 miles, to the position north of Beaver Branch about 8 miles, and to the position at Emmitsburg about 11 miles. There are four roads available for the advance of the enemy. This means that the enemy could make a very rapid advance and deployment. If unresisted, the enemy should be able to advance at the rate of not less than 2 miles per hour and could deploy his troops in about 2½ hours. If the enemy started his advance at 5:30 AM, and met with no resistance, he could thus be expected to be in a position to attack the position north of Owen's Creek at 11:00 AM, the position north of Beaver Branch at 12:00 noon, and the position at Emmitsburg at 1:30 PM, September 3d. The enemy must be held south of Emmitsburg, however, until 11:00 AM, September 4th. The division, if it occupied only one position, would have to hold the enemy at that point for 22 hours. If the division occupied only the positions north of Beaver Branch and at Emmitsburg, it would appear necessary to hold the enemy in the position north of Beaver Branch from noon of the 3d until dark. This might result in an engagement that would be difficult to break off. It therefore seems better to delay the enemy at all three positions, delaying him in the first two until dark on the evening of the 3d and withdrawing to the position at Emmitsburg under the cover of darkness. The position at Beaver Branch would be held by weak detachments until the morning of the 4th to offer slight resistance to the enemy and force him to deploy.

In addition to determining what positions are suitable for delaying positions, General A is confronted with the problem of deciding upon the method of occupying the posi-

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tion. Considering the front of the position and the number of roads leading to the rear, it appears advisable to assign zones of action to the two infantry brigades and direct them to occupy both the position north of Owen's Creek and the position north of Beaver Branch. General A must also decide whether to have the echelon north of Owen's Creek take up a defensive position or a position in readiness. There appears to be no doubt that the echelon north of Beaver Branch should take up a defensive position. If General A orders the echelon north of Owen's Creek to take up a defensive position, he may find that it will never be necessary to defend that position. The enemy may perhaps not advance as rapidly as General A expects him to and may be making no preparations for an attack tomorrow. Under such conditions General A would find his march northward unnecessarily delayed and his men would have had all of the fatigue of getting into position needlessly. It would seem, therefore, advisable for General A to take up a position in readiness from which he could either take up a defensive position or march north, but also to prepare important points for defense.

As regards the time of taking up a position in readiness north of Owen's Creek, General A has the following choices:

1. He may start his movement at once.
2. He may remain in his present position until daylight when his airplanes and cavalry should be able to discover the intentions of the enemy.
3. He may start his movement early tomorrow morning so as to have his troops in the new position at daylight.

If he starts the movement at once, the command will get no sleep and will not be in good condition for the strenuous day ahead of it. Moreover, the enemy will probably learn of the movement and may move his troops forward to Owen's Creek during the night, in which case General A would be able to get very little information as to the attack dispositions of the enemy until the attack was on him.

If he should remain in his present position until daylight and the enemy should launch his attack at that hour, General A would have no choice, but would have to fight in his present position.

By starting the troops very early tomorrow morning, so as to be able to reach the new position before daylight, the

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command will get some rest, the troops will be in the new position as soon as necessary, and the enemy will not discover the departure of the troops in time to change his plans. From Creagerstown and Jimtown to the position north of Owen's Creek the distance is about 3,000 yards. Each brigade would have two roads to move on. One battalion in each brigade is with the outposts. By marching the machine gun battalion with the regiment furnishing the outpost battalion, the longer column in each brigade would be 3,690 yards long. Therefore, from the time that the head of the longer column started from Creagerstown and Jimtown until the tail of the columns would reach the position north of Owen's Creek, 76 minutes would elapse. It is daylight about 5:00 AM. The troops could thus begin their march at 3:44 AM and be in the new position at daylight. It would be better, however, to start them at 3:30 AM to allow for any delay on account of darkness. The field trains should start at 3:00 AM. The troops assigned to the echelon north of Beaver Branch would not reach their positions until about an hour after daylight, but they would be at such a distance from the enemy that this would not be so important.

THE DECISION

General A decides to delay the enemy by occupying a series of positions, to assign zones of action to the infantry brigades, and to occupy successive positions by alternate regiments in the brigades; to start at 3:30 AM and occupy both the position north of Owen's Creek and the position north of Beaver Branch, the former as a position in readiness with important points prepared for defense, the latter as a defensive position; to start all trains except combat trains and the ambulance companies to Emmitsburg at 3:00 AM; to cover the withdrawal of the outposts by the 1st Squadron, 1st Cavalry, and 1st Machine Gun Battalion in position along the line, hill south of Thurmont—Graceham —hill 418.

Since there is little chance of a change in the situation during the night, General A decides to warn the units at once by telephone of the impending move, and to issue the order as soon as possible. The following order was issued:

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1st Div,
HOOVER'S MILL,
2 Sept 19, 8:30 PM.

FIELD ORDERS }
No 17 }

Map: Geological Survey, 1:62500.

1. The enemy in front of the 1st Blue Army has been strongly reinforced. The 5th Red Corps, consisting of the 9th and 10th Divs, has been detraining at FREDERICK, LEWISTOWN and WALKERSVILLE since the morning of Sept 1st. Aggressive action by the enemy tomorrow morning is expected. The 1st Army is withdrawing from its present position and will defend the line ROUND TOP—CR 491—GERMANTOWN—ST. LUKE'S CHURCH. The withdrawal began at 7:00 PM today. The 2d Div will delay the enemy east of the MONOCACY, holding him south of HARNEY until 11:00 AM, Sept 4th. The army cavalry will cover our right flank west of the mountains.
2. This division will delay the enemy between the MONOCACY RIVER and the mountains.
   Boundary between brigade zones of action: HIGHLAND MILL—RJ 427—HOOVER'S MILL—RJ 478—EMMITSBURG, all included in the zone of action of the 1st Brig (west brigade).
3. (a) The 1st Obsn Sq beginning at 5:00 AM tomorrow will observe the movement and dispositions of the enemy south of HUNTING CREEK and east of the MONOCACY, south of DOUBLE PIPE CREEK, and will reconnoiter toward LEWISTOWN, WOODSBORO, WALKERSVILLE and FREDERICK.
   (b) The 1st Sq 1st Cav, with 1st MG Bn attached, at 3:00 AM tomorrow, will be in a position along the line, hill south of THURMONT—GRACEHAM—hill 418 to cover the withdrawal of the outposts. At 4:00 AM it will push patrols south of HUNTING CREEK and east of the MONOCACY, south of DOUBLE PIPE CREEK, to determine the dispositions, movements, and intentions of the enemy.
   (c) The 1st Brig will start from JIMTOWN at 3:30 AM and will place one regiment of infantry with proper machine gun support in a position of readiness to defend the high ground north of OWEN'S CREEK within its zone of action, on the general line ROCKY RIDGE—hill 447 and the ridge to the northwest. Important points will be prepared for defense. The remaining infantry and machine guns will take up a defensive position on the high ground north of BEAVER BRANCH, within the zone of action, on the general line, hill 1,200 yards northeast of APPOLDS—hill 443—hill 478.
   (d) The 2d Brig will start from CREAGERSTOWN at 3:30 AM and will place one regiment of infantry with proper machine gun support in a position of readiness to defend the high ground north of OWEN'S CREEK, within its zone of action, on the general line ROCKY RIDGE—hill 447 and the ridge to the northwest. Important points will be prepared for defense. The remaining infantry and machine guns will take up a defensive position on the high ground north of BEAVER BRANCH within the zone of action, on the general line, hill 1,200 yards northeast of APPOLDS—hill 443—hill 478.
   (e) The 1st LA is attached to the 1st Brig.
   The 2d LA is attached to the 2d Brig.
   The 3d HvA will be in general support and will march at 3:30 AM. Two battalions will take position north of BEAVER BRANCH in the vicinity of RJ 408, the other battalion south of LONGS.

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(f) The 1st MG Bn is attached to the 1st Sq 1st Cav.
(g) The 3d Bn 2d Inf will constitute the division reserve and will take position at MOTTERS.
(h) The 1st Engrs will prepare for destruction of all bridges over HUNTING CREEK, OWEN'S CREEK, BEAVER BRANCH, and over the MONOCACY between HUNTING CREEK and DOUBLE PIPE CREEK. The bridges over HUNTING CREEK and the MONOCACY will be prepared for destruction before 4:00 AM. Bridges will be destroyed on orders of brigade commanders. The 1st Engrs will assist the 1st Brig and 2d Brig in the organization of the ground north of BEAVER BRANCH, on the line, hill 1,200 yards northeast of APPOLDS—hill 443—hill 478.
(i) The 1st F Sig Bn will take position in the vicinity of RJ 408.
(x) (1) The outposts will begin to withdraw at 4:15 AM.
(2) At least one-half of the artillery assigned to infantry brigades will be placed in position north of BEAVER BRANCH.
(3) Troops will withdraw from the designated positions only on the order of the division commander. The enemy will be delayed in favorable positions between the two designated positions on the initiative of brigade and subordinate commanders. All withdrawals will be by echelon.
(4) Connecting groups of one platoon of infantry and one section of machine guns from each main echelon of each brigade will maintain contact between brigades.

4. (a) The 1st, 2d, 3d and 4th Amb Cos will be assembled in the vicinity of LONGS.
(b) All field trains and divisional trains, less amb cos, will start at 3:00 AM and will march to EMMITSBURG, where they will receive further orders.

5. (a) Infantry and artillery brigades will be connected with the division command post by radio.
(b) *Axes of signal communications*:
Division: CREAGERSTOWN—349—408 — 481 — EMMITSBURG ROAD.
1st Brig: JIMTOWN—GRACEHAM—457—481—EMMITSBURG ROAD.
2d Brig: Same as the division.
(c) *Command posts*:
1st Div: Farm house near RJ 408.
1st Brig: Vicinity of CR northwest of hill 457.
2d Brig: APPOLDS.
1st Sq 1st Cav: GRACEHAM.
1st Engrs: CR west of MOTTERS.

A,
Maj Gen.

Distribution A.

The 1st Squadron, 1st Cavalry, and the 1st Machine Gun Battalion will occupy what might be considered an advance position if they are permitted to remain in it after the outposts have completed their withdrawal. There is also a considerable obstacle behind it. However, these troops are so mobile that they can be readily withdrawn at any stage of the attack. The ground favors the movement, as do the

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excellent roads leading directly to the rear. These troops may prove extremely valuable if left in this position and possibly prevent the rest of the division from having to fight at all at this point. When they are withdrawn from this position, the 1st Machine Gun Battalion would be sent to join the division reserve if its use was not demanded elsewhere.

Had General A left the outposts in position until daylight, he would have run the chance of their complete loss. Should the enemy attack at daylight with the outposts in position, these troops would be in extreme danger of being overwhelmed before they could withdraw.

The ammunition train might have been held at some point south of Emmitsburg, but there is little chance that it will be needed south of that point. Later in passing over the road the train would probably be subjected to long range shelling which it can avoid by going to the rear at this time.

It would be unwise to establish telephone communication at this time. The wire would have to be abandoned when the troops moved to the rear. As long as the majority of the troops remain in assembly formation, the radio will satisfactorily answer all purposes where distances are too long for couriers.

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(B) WITHDRAWAL FROM ACTION

Offensive and Defensive

MAJOR H. A. DRUM,
Infantry

Withdrawal From Action—The Offensive

Map: Pennsylvania-Maryland Geological Survey Map, 1:62500, Gettysburg, Emmitsburg, Taneytown Quadrangles. Gettysburg-Antietam, 1:21120; Taneytown, Bonneauville, Kingsdale, Gettysburg, Emmitsburg Sheets.

General Situation:

The Blue main army, invading from the north, is engaged with Red forces in the vicinity of Waynesboro and Greencastle.

A Blue army corps, covering the passes of South Mountain on May 15, 1920, is engaged defensively on the line Bridgeport—Emmitsburg with a superior Red force attacking from the south.

PART I

Special Situation (Blue):

During the forenoon of May 15th, knowledge of Red forces advancing north via the Keymar—Taneytown road caused the commander of the Blue army corps to dispatch the 1st Blue Division to hold the Longville Ridge as a protection to the corps left flank. The left flank rests just west of the Monocacy and south of Bolinger S. H. The 1st Division, marching via Barlow—Harney—Taneytown road, encountered a Red force of all arms in a meeting engagement for the possession of the Longville Ridge.

By 3:30 PM, the Longville fight presents this situation:

The 1st Blue Division holds the south slope of the ridge against what appears to be a Red force of equal strength; the Blue troops are located as follows:

1st Brigade (less 2d Infantry):

1st Infantry (less 2 companies) entirely deployed on the front, southeast corner of woods south of road junction 510—road junction 541—road junction 545, inclusive, 2 companies in brigade reserve at 510.

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The 2d Machine Gun Battalion has 2 companies with the 1st Infantry and the rest of the battalion in brigade reserve at 510.

The brigade command post, farm house north of 510.

Losses estimated at 500.

2d Brigade:

3d Infantry (less 2 companies) entirely deployed on the front road junction 545, exclusive, road junction 544—south edge of woods to farm road.

Two companies in reserve north of hill 576.

4th Infantry (less 1 battalion) extending line of 3d Infantry to south edge of woods on hill 574.

Brigade reserve, 1st Battalion, 4th Infantry, and 3d Machine Gun Battalion (less 3 companies) concealed in woods on north slope of hill 574.

The 3 machine gun companies are with the 3d and 4th Infantry.

Brigade command post at farm house, north slope, hill 576.

Losses estimated at 400.

Division Reserve:

1st Battalion, 1st Engineers, and 1st Machine Gun Battalion are on Alloway Creek near road junction 435. 2d Infantry is at Alloway Creek southwest of hill 482.

1st Field Artillery Brigade:

1st Light Artillery, just northeast of Harney.

2d Light Artillery, concealed in woods east of road junction 548 and southeast of hill 563.

3d Heavy Artillery, north of woods east of Headgegrove.

1st Engineers (less 1 battalion), working on bridges and roads near Barlow.

1st Observation Squadron, on corps air field near Gettysburg.

1st Squadron, 1st Cavalry (less Troop A), near Washington S. H., opposed by Red cavalry. Troop A is covering the right flank.

3d and 4th Ambulance Companies have established dressing stations at Harney and at farm house 1½ miles east of Koon farm house, respectively.

4th Field Hospital Company is established at Mt. Joy Church.

Division and field trains (less above) are enroute on Taneytown Road north of Barlow. Division railhead, Gettysburg. All combat wagons are being refilled at Barlow.

Division command post, advance echelon, Koon; rear echelon, Gettysburg. Wire or radio communication exists to all brigade commanders, observation squadron, cavalry squadron, corps headquarters and to Gettysburg.

With General A at Koon, in addition to his general staff, are the artillery brigade commander, commanders of 2d Infantry and 1st Machine Gun Battalion.

At this time (3:30 PM) General A estimates the Red situation as follows: The Reds, after failing to secure the Longville Ridge in the conflict of the advance guards, paused to organize a systematic attack. About seven or eight battalions of Red infantry are deployed on the line from woods

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1 mile west of Washington S. H. through road junction 513 to northeastern slope of hill 531, and are engaged in a heavy fire fight with the Blue firing line. The Red artillery, located on the ridge east and west of Taneytown, seems equal to the Blue artillery; neither has gained superiority.

Heavy artillery, rifle and machine gun fire has been heard for the last two hours to the west, indicating a serious engagement about Bolinger S. H.

At 3:40 PM, while considering the situation, General A receives these messages:

Tr A,
ECKHARDT,
15 May 20, 3:28 PM.

General A:

My patrols report: Red infantry, estimated one regiment, advancing west and north along creeks south of hill 507 and east of BOYD. Leading element turned north at creek junction southeast of BOYD at 3:25 PM. A Red cavalry patrol seen at ALEXANDER. Small Red infantry force on hill 526 southwest of LONGVILLE.

D,
Captain.

(By mounted messenger, relayed by telephone by 1st Brigade.)

1st Sq 1st Cav,
WASHINGTON S. H.,
15 May 20, 3:30 PM.

General A:

Have defeated decisively and driven hostile cavalry east via GALT—546—626—road. Tr D pursues. Red infantry, estimated 1 bn, massed on your left front ½ mile south of hill 542.

M,
Major.

(By radio.)

Dropped messages from airplane received at 3:35 PM. "Red infantry, estimated 1 regiment, advancing north in small columns direction BOYD—ECKHARDT."

Required:

A brief statement of any action General A takes at this time and the orders issued therefor.

A Solution

Counter-Attack

General A decides to hold the contemplated Red attack against his right by using the reserve of the 1st Infantry, the 1st Machine Gun Battalion and artillery fire, and to make

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a counter-attack against the Red left with the 2d Infantry. The counter-attack will be launched under cover of the woods southwest of Piney Creek Church. The 1st Battalion, 1st Engineers, will be retained in reserve.

At 3:45 PM, General A turns to his staff and other officers present with him and states:

"Take this down:

"Red infantry, about a regiment, is advancing north along creek east of Boyd—Eckhardt to attack our right. Our cavalry has decisively defeated the Red cavalry near Washington S. H. and located a Red battalion ½ mile south of hill 542.

"The 1st Brigade will meet the Red attack by extending its line toward road junction 491.

"1st Machine Gun Battalion moves at once via 507 to position southeast of Piney Creek Church to cover by fire hills 531—526—532.

"2d Infantry moves at once to cover of woods southwest of Piney Creek Church. It will attack in direction hills 526—532, after enemy passes north of those hills.

"Brigadier General E (artillery brigade commander), delay hostile advance on our right and support with one light regiment 2d Infantry attack.

"Chief of staff, inform brigade commanders and tell commander of 1st Squadron, 1st Cavalry, to support left of 2d Brigade."

PART II

(Continuation of Part I)

Special Situation (Blue):

Between 3:45 and 3:50 PM, General A receives the following message:

1st Blue Corps,
FAIRPLAY,
15 May 20, 3:35 PM.

General A:

Our army corps is retreating to the north. Left of the line withdraws at 4:45 PM to ROUND TOP. You will cover our left. Your railhead changed to CENTER MILLS, effective at 6:00 PM today. Acknowledge.

X,
Comdg.

At this time (3:50 PM), the Blue firing line seems to have retained fire superiority as the Reds in its front have not advanced. No other information has reached General A.

Required:

1. General A's decision and reasons therefor (briefly).
2. Any orders General A issues, exactly as given.

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A Solution

Withdrawal From Action

DECISION

General A decides to withdraw at once to the ridge east of Barlow (Miller—G. Hoffman—Trustle—B. D. Snyder). 2d Infantry, 2d Light Artillery, 1st Battalion, 1st Engineers, 1st Machine Gun Battalion and cavalry will form the covering force.

REASONS

In view of the Red strength, especially in its enveloping force, the chances of success for the Blue counter-attack are not very promising. If this attack fails, the Blue division will probably be routed and will not be able to accomplish its important mission of covering the corps' left. At this critical stage, this latter mission is too important for General A to risk the destruction of his division in an uncertain offensive.

However desirable it may be for General A to hold his present position until the left of the corps withdraws, still such a decision would involve the deployment of his whole force. Under such conditions, a withdrawal, having in mind the future protection of the corps' left, would hardly be practicable. An orderly withdrawal, coupled with a reformation of the command, requires a covering force capable of holding the pursuers long enough for the above purpose.

By initiating the withdrawal at once, General A avoids the Red envelopment, has the Red attacking line at a distance, and has the 2d Infantry, the 1st Machine Gun Battalion, the artillery and engineer battalions immediately available to hold a covering position. In addition, regiments in the firing line have not absorbed their reserves, which can assist in the local withdrawals.

The Red force will have to follow the Blue withdrawal for some time before it will be in shape to turn against the Blue corps. If a strong Blue covering force is encountered northeast of Harney, Reds will have to dispose of it before operating west of the Monocacy. The foregoing action should gain sufficient time for the uninterrupted withdrawal

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of the Blue Bolinger S. H. force and very probably until darkness.

If the 1st Brigade is pulled back first, the hostile enveloping force will probably cut off the retreat of the 2d Brigade. The 2d Brigade is more easily disengaged and, by retiring at this time, will be in condition early for future action. The reserves in the 2d Brigade and vigorous action by the cavalry should prevent the Red right from cutting off the 1st Brigade.

While Alloway Creek is fordable, nevertheless it presents quite an obstacle. The Blue main covering position had better be north rather than south of this creek, and bridges should be destroyed to gain time. The nearness and strength of the Red enveloping force demand close assistance to support the withdrawal of the 1st Brigade. A detachment of the 2d Infantry with machine guns holding temporarily near crossroads 507, aside from performing the above function, should insure sufficient time for the rest of the 2d Infantry to gain the main covering position northeast of Harney.

The entire Blue artillery will remain in action until the 1st Infantry crosses Alloway Creek. The Red artillery should thereby be prevented from reaching the Blue covering position with the effective fire without first making a material advance. The time required for such an advance by the Red artillery will afford an excellent opportunity for the last Blue infantry to fall back north of Alloway Creek.

General A should have in mind the early formation of a rear guard, and will no doubt use the troops designated for the covering force for this purpose. However, it would be premature to issue orders for a rear guard at this time. General A's present concern is the withdrawal of his command north of Alloway Creek. If he is hard pressed, or if the Reds in his front attempt interference with the Blue Bolinger S. H. force, General A may have to adopt the tactics of a delaying action. The 2d Brigade and 2d Infantry would then be employed in a series of successive and co-ordinated withdrawals. The situation existing in the Blue front and west of the Monocacy, after the ridge north of Alloway Creek has been reached, will so influence any orders for a rear guard that their issue had better be held in abeyance until that time.

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Locations north of the ridge, extending between Miller and Trustle, are selected as assembly points for three reasons: They are straight to the rear, sufficiently distant to insure a re-formation of the command, and the ridge mentioned should be held until it is known that the rear elements of the Blue Bolinger S. H. force have reached the road running west from Barlow.

ORDERS

General A issues orders as follows:

4:02 PM To chief of staff and G3:

"We withdraw. Halt movement 2d Infantry and 1st Machine Gun Battalion. Have commanders of these units report here at once. Inform brigade commanders. 2d Brigade withdraws first. Orders follow."

4:06 PM To commanders and staff present:

"Take this down:
"Our corps is withdrawing its left to Round Top.
"We withdraw to Miller—Trustle—B. D. Snyder ridge.
"2d Infantry, 2d Light Artillery, 1st Battalion, 1st Engineers, 1st Machine Gun Battalion and Troop A (Colonel A, commanding) cover withdrawal. Covering position, ridge northeast of Harney. Leave a detachment including machine guns near 507 ridge.
"1st Squadron (less Troop A), attack Red right and cover our left.
"1st Observation Squadron, continue present functions. Employ one flight to delay Red advance by combat action.
"The 2d Brigade, withdraw at once—right first—direction Lambert—crossroads 470—Trustle. Assembly point Faulk. Hold one regiment and machine gun battalion near crossroads 483 north of 470.
"1st Brigade (less 2d Infantry) meets Red attack. When I so order, it withdraws—direction Angel—Koon—C. H. King. Assembly point D. F. Plank—C. H. King.
"Artillery brigade covers withdrawal from present position. Retire on my order, 1st and 3d Regiments (less 2d Light Artillery) to positions covering Miller—Trustle ridge.
"All combat wagons to St. Mary's Reformed Church. Combat trains, 2d Light Artillery, join regiment.
"Division headquarters opens Two Taverns at 5:15 PM. Axis: Koon—Trustle—Two Taverns.
"At 4:45 PM, I shall be at Angel where General B (1st Brigade) will report.
"Move out."

4:15 PM The chief of staff states:

To Lieutenants P and Z, aides:

"Deliver that order to 1st and 2d Brigade commanders.

To G3:

"Inform cavalry squadron commander and corps commander by radio."

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To G1:

"Have bridges on Monocacy between Harney and Lott and those over Alloway Creek destroyed in time to prevent Red use. Change line of supply and evacuation to east of Gettysburg via Hunterstown. Send 2d echelon division headquarters to Hunterstown."

Chief of staff later telephones above order to 1st and 2d Brigade commanders.

Discussion

THE DECISION

The foregoing problem has been framed with the object of illustrating the tactical principles involved in a "withdrawal from an offensive action." The final decision is therefore manifest. Nevertheless such a decision should not be accepted without first determining whether or not the attack can be carried out to a successful conclusion. Such a decision is one of the most difficult of all tactical decisions. On the one hand, the opportunity for a temporary successful stroke may be grasped if the attack be continued, but the ultimate result may be absolute ruin. On the other hand, the chance for success is lost by retreat, still, if the withdrawal is not made at the right time, demoralization may result from too close contact with pursuing forces. To decide upon retreat at the right moment requires military instinct. No rule can be laid down governing such a decision.

With the foregoing in mind, the first situation of this problem was framed to emphasize the desirability of maintaining the fight as long as there was a chance of success and the execution of the mission assigned. Until the receipt of the corps commander's message of 3:35 PM, the necessity for a withdrawal was not evident.

It is apparent that the question of whether to withdraw or to continue the fight depends upon the main mission, the strength of the contending forces and the factors of time and distance. Such a contingency should always be in the commander's mind and a mental plan therefor should be formulated at the beginning of all attacks. The necessity for such an action should be appreciated as early as possible.

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After the opposing lines have arrived within 600 yards of each other, an orderly withdrawal is out of the question, unless the terrain is especially adapted to such tactics. At such a time local and main reserves will generally have been launched into the attack, and only small bodies of troops will be available to cover the withdrawal. Under such conditions, if tactical conditions permit, the withdrawal should be delayed for the cover of darkness.

A decision to withdraw should be reached as early as circumstances will permit and, especially, before the main reserves are sent into the attack. Leaders are not justified in holding out reserves for such a contingency. It is a question of coming to a definite decision as early as possible, and then to put forth all efforts in accordance therewith. If one decides to continue the attack, he should do so with all his strength, whereas a decision to withdraw should be clear cut and a complete disengagement should be sought with as much energy as would be employed in continuing the attack. Neither operation permits half-hearted decisions or actions.

Lines of Retreat

In the first place we must distinguish between *lines of retreat and lines of withdrawal.* The former relate to the main direction which the force involved, and considered as a whole, will take in its retreat. While the lines of withdrawal relate to primary directions, each subordinate unit follows in breaking off the engagement and in throwing off the enemy. Although these two features are co-related, their selection is influenced by somewhat different considerations. The following general principles govern in the selection of the line of retreat: Select the line that gives the greatest strategical advantages; select the shortest line to reinforcements, or to a safe position; select the lines that will lead to an early concentration of the troops and from which the enemy can be prevented from driving you.

In the problem under consideration, there is no question as to the direction of the retreat. The mission assigned the 1st Division limits the selection. Then, again, the terrain to the north (rolling) is most suitable for covering a retreat. However, such ideal conditions are not always found in actual practice.

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When the mission does not limit the commander, as in the case we are now considering, one should study the questions of supply, obstacles to impede the hostile advance, and terrain which offers commanding ground, under cover of which to reorganize and to re-form the command. The above factors should be looked for at a considerable distance from the battlefield (3 to 5 miles). On the other hand, the terrain features in the immediate vicinity of the battlefield influence the lines of withdrawal. The retreat proper can seldom be taken up in an organized manner until the enemy has been thrown off and some freedom of action has been gained.

We must keep in mind that frequently the lines of withdrawal will necessarily be divergent in the beginning (enveloping attack). A line of retreat providing for a convergency of these lines of withdrawal is desirable. (Lines of withdrawal will be discussed later.)

The principles of conducting a retreat have previously been given, consequently, we will limit our discussion to the withdrawal proper.

Covering the Withdrawal

While the immediate withdrawal of each subordinate unit should be covered locally by elements of the same organization, there is need for a separate and distinct element of the command to be interposed between the pursuing enemy and the retreating fighting line. This latter element is known as the "covering force."

Every effort should be made to place distance and a rear guard between the enemy and the retreating troops. Unless some troops can be gathered to cover the withdrawal of the hardest pressed part of the battle line, a rout will result. If a reserve remains intact, it should be used for this purpose. Even up to the last moment before an assault is delivered, there will generally be some formed supports or some part of the line not seriously engaged. These troops should be used to cover the withdrawal in the absence of reserves. If choice exists, the best troops, whose morale and strength are least impaired, should be used for this purpose.

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While the covering force should comprise all arms, the long range and effectiveness of artillery and machine gun fire make these arms invaluable in delaying a pursuit and in gaining time for the re-formation of the main forces. The cavalry, machine guns, and artillery should form the screen under cover of which the infantry throws off the enemy and takes up its march formation. Some infantry is needed in the covering force for immediate protection of the other arms. If a covering position has to be held for some time, the size of the infantry element should be materially increased.

The long range and wide radius of fire of the artillery make this arm invaluable in protecting the flanks and in preventing a rapid advance by hostile batteries. Positions should be sought with the above objects in mind and, also, so as to permit effective action for long periods. If gas shells are available in sufficient quantity, roads, defiles, etc., may be effectively blocked by the use of gas.

The position of the artillery of the covering force should be within effective range of the enemy before he starts his pursuit. If it is too close, an early change will be necessary. If it is too distant, the withdrawing line will be without artillery support at a critical moment. Positions to the flank greatly facilitate the artillery action and may force the enemy to detach troops to dislodge the artillery.

The main action of the artillery should be against the hostile artillery, cavalry, and infantry advancing in trucks, as military history shows that "pursuing infantry will never, by means of its legs alone, be able to overtake retreating infantry."

The question of superiority of fire greatly influences the amount of artillery to be retained in action until the last moment and, also, the method to be followed in retiring the artillery from one position to another. While all the artillery should be retained in action as long as practicable, it is essential that its timely withdrawal and consolidation into the marching columns be considered. The foregoing principles dictate the employment of all the artillery to cover the early phases of the withdrawal and the assignment of a definite unit as a part of the covering force to assist in the final phases.

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The question of artillery superiority and fire greatly influences the method to be followed in changing the artillery from one position to another. If superiority in artillery fire has been gained, the change should be made by echelon in order to keep the hostile artillery at a distance. If the enemy has the superiority, a change by echelon would enable him to concentrate all his fire on the remaining batteries and thereby pin them down, prevent limbering, etc. Under such conditions, the batteries should move, as far as possible, by separate covered routes and nearly simultaneously.

Machine guns are especially valuable in covering withdrawals as well as in all delaying actions. The role of the machine gun is to delay the hostile infantry and cavalry by forcing deployment at a distance. Machine guns present small targets with great volume of fire. They are advantageously employed in echelon so arranged as to cover each other. However, special arrangements are necessary to insure their supply of ammunition.

The cavalry should be used unsparingly. By its shock action, it can delay the advancing infantry long enough to permit the covering force to form and occupy a favorable position. A hostile cavalry force will follow the principles of a pursuit, and endeavor to reach the flanks of the retreating columns. Our own cavalry should counteract such a move. Then again, as in this problem, its delaying capabilities can be used to hold off a dangerous element.

In the execution of a decision to withdraw, the commander's first thoughts should be for the timely retirement of the firing line and the means necessary to assist its retirement, i. e., covering forces. His initial orders should cover these points, and include the duties and location of the covering forces. Following this, his plans should cover the necessary provisions to delay the pursuit, i. e., formation of a rear guard.

All means and attempts to delay the hostile pursuit should be co-ordinated. The covering troops will eventually become the rear guard. The troops designated for this purpose should be under the command of the same leader, who can insure co-operation and a definite plan. Cavalry, operating to a flank on a temporarily distant mission, may be kept independent for the time being.

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In the present situation, the Blues are not thoroughly committed to the attack. The Blue main reserve (2d Infantry) and the local reserves have not been engaged. The latter can assist their respective commanders in the local withdrawals.

While the main reserve and all the artillery should be employed in the beginning to cover the withdrawal of the fighting forces, steps should be taken to retire the mass of the artillery in time. The main reserve, reinforced by one light artillery regiment and assisted by the cavalry, should be able to cover the withdrawal after Alloway Creek has been crossed. Holding the regiment of the 2d Brigade temporarily north of Alloway Creek, is a desirable precaution until the outcome of the initial phase of the withdrawal is known.

The local regimental reserves, assisted by artillery fire, should furnish sufficient support for the immediate withdrawal of the firing line. The main covering force should be located to assist the withdrawal of the local reserves, and to halt the pursuit long enough to permit the regiments of the firing line to reform and take up a proper march direction.

The conduct of the covering force is, at first, similar to a delaying action, and later to that of a rear guard. The first object is to facilitate the withdrawal of the fighting line, while the second is to insure its own retirement. As the advance troops usually must withdraw straight to the rear, the covering force should take up a position to the flank. The first position should be far enough to the rear and flank to prevent the troops occupying it from being influenced by the withdrawal of the front line. Still it should be near enough to exert an influence when the withdrawal begins and thus cover the retreat of the reserves of the firing line.

The position northeast of Harney has many advantages in the above respect. It is to the flank of the lines of withdrawal of the fighting line and, also, blocks any early attempt by Reds to cross the Monocacy. Reds, pursuing the Blue fighting line, will have to dislodge the Blue covering force before they can move in force north of Koon. Then again, the Red reserve (enveloping wing) will naturally initiate

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the pursuit. This makes desirable the location of the Blue covering force on the west flank. The disadvantages of the position northeast of Harney relates to the eventual withdrawal of the Blue covering force. If the Reds gain much ground toward Koon, the Blue covering force may be driven toward Barlow and will thereby uncover the Miller—G. Hoffman—Trustle ridge. With such an eventuality in mind, a regiment of the 2d Brigade is held on the ridge east of Koon.

The 2d Light Artillery is placed in the covering force and held in present position until the last, as it can be used with either the 2d Infantry or the regiment of the 2d Brigade held east of Koon. In addition, it can flank by fire any attack directed against the 2d Infantry.

The occupation of the covering position is covered by the principles of a delaying action, i. e., maximum fire effect at mid and long ranges, bold front, firing line strong with weakness in depth (support and reserves). A good field of fire at short range is not needed. After the first position has fulfilled its purpose of covering the withdrawal of the advance lines, successive positions in rear may be taken up to facilitate the formation of the rear guard. However, the use of many such positions is apt to permit too close contact by the pursuer and to result in the necessity of the main body having to assist the rear guard. The covering troops should disengage and completely free themselves from the enemy as soon as conditions of the withdrawal permit.

Withdrawal of the Fighting Line

The method of withdrawing the fighting line depends on many circumstances. There are, however, well defined principles in this regard. The step by step withdrawal, i. e., successive positions, cannot be continued long without involving an excessive number of troops and increasing the demoralization. Deployed troops withdrawing under fire cannot escape all losses by running. Aside from the main covering force mentioned in the foregoing, separate parts of the fighting line should assist each other as well as themselves in the primary phase of the withdrawal. Therefore, the whole line should not be pulled back at the same time, but rather in fractions, i. e., by small organizations.

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Field Service Regulations prescribe in paragraph 202, that the troops which can be most readily disengaged should be the first to fall back. This will not always be the case. The danger of an exposed flank, cover offered by the terrain, direction of the line of retreat and its protection are points that should be considered.

Deployed troops cannot radically change their front or direction of advance until partially assembled. They can not be assembled or reorganized until completely disengaged from the enemy. The withdrawal of the firing line must then be practically straight to the rear in deployed lines until well beyond the covering troops. The smaller units can be partially collected, but the complete reorganization should not be attempted until a distant safe place is reached.

In practically all withdrawals, some troops will have to be sacrificed. Every one cannot be saved. It is a question of saving all that is possible. It is better to sacrifice a part of one organization than parts of several organizations. In the latter case, demoralization may extend to all organizations, whereas in the former it may be limited to one.

In the case under consideration, the 1st Infantry should be sacrificed if necessary and all other units saved. The 2d Brigade has few losses comparatively speaking. It is not threatened by the heavy attack to be delivered by the Red reserve. It has a strong local reserve and the terrain features are favorable for its early disengagement. Timely attacks by the Blue cavalry should greatly facilitate the 2d Brigade's withdrawal. Having determined to at least save the 2d Brigade, it would be a mistake to hold this brigade south of Alloway Creek as such an action would prevent early disengagement with the Reds.

Assembly Points

The initial retreat, straight to the rear, causes the use of divergent lines during the first part of the withdrawal. Then again, the troops are apt to be scattered over a broad front due to confusion, demoralization, etc. Assembly points should be designated for each large unit. These points should be far enough to the rear to let the deployed lines shake off the pursuer and to insure sufficient time for un-

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disturbed reorganization. They should be in the direction of the natural channels of movement. Their distance to the rear should be measured in miles, not in yards. Generally, some special feature of the mission or of the terrain will be the governing factor in their selection. Local assembly points, sometimes referred to as "rallying points" and "rendezvous places" are designated by local commanders for their own withdrawing organizations.

The reason for the selection of the assembly points north of the Miller—G. Hoffman—Trustle ridge is evident.

Trains, Etc.

The trains need consideration from three viewpoints, i. e., replenishment of ammunition and supplies; evacuation of casualties; withdrawal to a safe position and in such a manner as will not interfere with the retirement of the troops.

The replenishment of ammunition can generally be accomplished by sending the combat trains to points along the lines of withdrawal where they will come in contact with their own organizations. Otherwise, small lots of ammunition may be dumped along the lines of withdrawal. The distributing stations will have to be located well to the rear. In the case we are considering, it seems practicable to meet these needs by sending the combat trains (less 2d Light Artillery) to St. Mary's Reformed Church and from there to have them join their organizations. The 2d Light Artillery will need a replenishment before leaving present position.

The evacuation of casualties presents a serious problem. While every practicable step should be taken to evacuate the wounded, especially the light cases, it should be realized that a number of the wounded will have to be left in the enemy's hands, sufficient medical attendance being left with them. In the present case the 4th and 3d Ambulance Companies could continue in present positions until the fighting line crosses Alloway Creek. Thereafter, the 4th Ambulance Company should continue with the covering force, establishing a dressing station farther north. The 4th Field Hospital Company can continue at Barlow for some time. However, to meet the needs of the 2d Brigade, a field hospital

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company should be established at Two Taverns without delay.

In view of the change of railhead and the direction of the line of retreat, all trains should be shifted at once to the east of Gettysburg.

ORDERS

The situation presented by a withdrawal problem generally prohibits the use of a formal combined order. The exact time for the movement of each fraction of the command cannot be foreseen and can only be judged by subsequent events. In addition, there is not sufficient time for the preparation of a formal combined order. The orders are generally issued fragmentarily, i. e., successive instructions sent to the various units. After the withdrawal has been effected, a formal combined order may be issued to orient and to familiarize the command with the whole situation.

Nevertheless, the withdrawal should be in accordance with a simple plan, systematically arranged and executed. Each unit should be informed of as much of the situation and the movements of the command as will insure co-operation, avoid confusion, crossing of lines of withdrawal, etc. Separate orders are generally sent out in the sequence in which the organizations are to move, but distance and facilities for reaching units should be considered in this connection.

When it is evident that the covering force is to become the rear guard, care should be taken to inform it of the lines of withdrawal and retreat to be followed by all organizations, and, also, of the direction of its march as rear guard. The foregoing is necessary to prevent a movement in a wrong direction, thus uncovering the retreating troops and their assembly points.

Frequently the commander must retain in his own hands the decision as to the exact time of withdrawal of some special unit. It may be necessary for him to sacrifice a unit in order to save the rest of his command. Under such circumstances, it may not be safe to leave the time of withdrawal to the discretion of that unit commander. It

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is better to tell him to hold until further orders. In the case under consideration, it is best for General A to tell the commander of the 1st Brigade of the general plan and of his duty to cover the withdrawal of the 2d Brigade, etc., and also, to tell him to hold his present position until further orders. When General A sees that the 2d Brigade has made good its retirement, and that the 2d Infantry is in position to cover the 1st Infantry, he will then send word for the 1st Brigade to withdraw.

Reorganization of the withdrawing units is the function of the brigade commanders. They, themselves, or one of their principal assistants, should go to the assembly points of the units to assist in this work.

Position of the Commander

The commander's duties are two-fold; he should assure himself of the success of the withdrawal and should reach the vicinity of the assembly points in time to assist in reorganizing the command and to provide for the future. Field Service Regulations authorize a commander to retire for the latter purpose, after the withdrawal is well under way. Psychology plays an important part in this question. The mere presence of the commander among his retreating troops has been known to have rallied them. The knowledge that their commander has ridden from the battlefield and in their minds has deserted them, will frequently cause a panic among the already somewhat demoralized troops.

In this problem, General A's most important duties are near the battlefield. He must designate when the 1st Brigade will commence its withdrawal, and see that the covering troops hold in their first position long enough for the other troops to make good their retreat, etc.

Withdrawal From Action—The Defensive

Maps: General Map, Gettysburg-Antietam, 1″=10 miles and Gettysburg-Antietam, 1:21120, Gettysburg, Bonneauville, New Oxford and Hunterstown Sheets.

General Situation:

War has just been declared between Red (north) and Blue (south) states. Conewago Creek forms the frontier.

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Reds are concentrating at Carlisle and the Blues on the front Hanover—York.

Special Situation (Blue):

The 1st Blue Division, designated to defend the frontier north of Gettysburg, has sent forward in advance a detachment under command of General A to hold Harrisburg Road at Plainview crossing. The detachment marched via the McSherrystown—Centennial—Cedarridge—Hunterstown road.

During the forenoon of May 20, 1920, the Blue detachment, encountering a superior Red force marching southeast on the Hunterstown—Granite Hill—572 road, took up a defensive position along Cedarridge—F. Noel ridge to await the arrival of the rest of the division. The Reds, with an estimated strength of a division, are now attacking.

The Blue position follows the general line of the 600 contour, and is held as follows:

1st Infantry (less 1 battalion) is holding from second farm house northeast of 612 to due west of 614. The 1st Battalion is in regimental reserve at Brush Run S. H.

2d Infantry (less 1 battalion) is holding from west of 614 to 601 road junction.

1st Light Artillery is located—1st Battalion southwest of Breshner—2d Battalion west of Fleshman.

1st Battalion, 2d Infantry, and 2d Machine Gun Battalion (less 2 companies with the 1st and 2d Regiments) are in reserve on Brush Run east of 614.

Company E, 1st Engineers, is working on the roads east of Store.

4th Ambulance Company is established at 481W.

Field trains are at Centennial. Combat wagons are being refilled by a section of the divisional ammunition train at Mt. Pleasant S. H.

The 1st Squadron, 1st Cavalry (less 1 platoon), having driven a weaker cavalry force north toward Newchester, is now near Brush Run Village, reconnoitering north and west. The platoon is near Bonneauville observing the Hanover Road.

Flight A, 1st Observation Squadron, is operating with the Blue detachment.

General A is at crossroads 606, connected by telephone to each infantry regiment.

The artillery regimental commander and commanders of the 1st Battalion, 2d Infantry, and 2d Machine Gun Battalion are with General A.

Earlier in the forenoon, the Blue air service discovered Red forces approaching Hunterstown from the west and north. Since 11:00 AM the Red air forces have held com-

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mand of the air, preventing any systematic observation by the Blues.

At noon General A receives the following messages:

1st Sq 1st Cav,
BRUSH RUN VILLAGE,
20 May 20, 11:50 AM.

Gen A:

Hostile infantry and artillery are marching southeast via HUNTERSTOWN—585—GULDENS road. Point of advance guard cleared 855 at 11:45 AM. I will delay enemy's advance from vicinity MORITZ S. H.

(By radio.)

C,
Maj.

1st Blue Div,
HANOVER ROAD,
20 May 20, 11:40 AM.

Gen A:

Division is delayed. Headquarters will reach BRUSHTOWN at 2:00 PM today. Will march on GETTYSBURG via HANOVER ROAD.

(By radio.)

B,
Gen.

1st Plat, Tr A,
RUBISILL N of BONNEAUVILLE,
20 May 20, 11:40 AM.

Gen A:

What appears to be two regiments of Red infantry are marching south on the 617—562—M. FINK road. Head now 1 mile north of M. FINK.

E,
Lt.

(By mounted messenger, relayed by telephone, 2d Infantry.)

The Red attacking line advanced with its center along 572—560 road. It was estimated that the line consisted of an infantry regiment on each side of the road, each regiment being deployed on a front of about 800 yards. Reds made repeated unsuccessful attempts to push their attacking lines east of Swift Run Creek. At this time (noon), both of these Red regiments are holding the line of Swift Run and firing briskly, but show no tendency to advance. Red artillery has been located near R. F. Weaver, and has been partially silenced.

The Blue regiments of the firing line have absorbed all of their supports and regimental reserves except the 1st Infantry which has a battalion at Brush Run S. H. and the

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2d Infantry which has two companies east of F. X. Noel. The casualties are about 500 and are being collected along Brush Run Creek.

Discussion

The same principles are applicable to the withdrawal from the defensive as stated for the offensive. The following additional principles are of special importance in the defense:

The withdrawal should generally be decided upon and commenced before the assailant enters the zone of short ranges. Otherwise a systematic operation will be very difficult.

If the defense has used up its reserves, the withdrawal should begin on that part of the front where the enemy's pressure is not the heaviest, or where the enemy has not attained fire superiority.

Generally, all the troops of a local front should be pulled back at the same time. If a company cannot stop a hostile advance, surely a platoon in the same position can not; while leaving a small fraction of the command to continue to delay may result in the loss of the whole force.

The covering position should be far enough to the rear to prevent the enemy from taking both it and the main position in one rush.

Unless the withdrawal is a voluntary one, and made before the hostile attack is seriously felt, there is little choice of direction for the lines of withdrawal. In a forced withdrawal the defender, at first, will generally have to fall back in the direction in which the hostile main attack has taken place. In other words, if the hostile main attack is an envelopment, the line of withdrawal will generally have to be toward the opposite flank.

The position selected for the artillery should be so located that fire may be directed upon the old defensive position where the enemy will undoubtedly linger for some time in order to reform, to some extent at least, his disordered troops.

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A Solution

DECISION

General A will withdraw at once to Marysville Ridge in order to cover the crossing of the Little Conewago by the division. The plan in detail is as follows:

The brigade reserve (1st Battalion, 2d Infantry, and 2d Machine Gun Battalion, less 2 companies), 1st Battalion, 1st Light Artillery, and the cavalry platoon will cover the withdrawal. This force will first hold the ridge north of Square Corner.

The 1st Battalion, 1st Infantry, now at Brush Run S. H., will cover the right, first position just north of 606, later retiring via Store. The 2d Battalion, 2d Light Artillery, will retire at once to Marysville Ridge, from which place it will assist the right of the line.

The 1st Infantry (less 1st Battalion) will withdraw at once, followed by the 2d Infantry (less 1st Battalion). These two regiments will move directly to Marysville ridge and prepare to defend it. The cavalry squadron, when forced to retire, will cross the Conewago and await orders north of Irishtown. Wounded and trains will be sent to McSherrystown. Combat trains will join organizations east of Marysville Ridge.

Discussion

General A's mission is now changed to insure the crossing of the Little Conewago by the division. By holding his present position, he will have to meet an envelopment of his left flank by a force stronger than his reserves, and probably shortly thereafter his right will be struck by a force of some strength. It will be three and one-half hours before the division can lend him any material assistance. It is estimated that the superior Reds can defeat decisively the Blue detachment during this time.

By retiring to the Marysville Ridge, General A avoids the envelopment of his left, gains two miles on the strong Red reinforcements and draws two miles nearer his division. He thus avoids a defeat and has good chances of accomplishing his present mission.

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General A's immediate danger is the Red force marching via M. Fink. The Blue cavalry squadron should gain some delay and may keep the additional Red artillery from reaching effective range for at least one-half hour. Nevertheless, the danger is so imminent that the withdrawal should be expedited.

The Blue reserves and one battalion of artillery, from a position on the ridge north of Square Corner, should be able to block the Hanover Road and at the same time cover the withdrawal of the 2d Infantry. From this position, the artillery can reach with effective fire the whole front. This position offers a good field of fire at long range to the north as well as to the west. The reserve of the 2d Infantry should be able to hold temporarily the hostile envelopment. The small ridge at F. X. Noel is a suitable position for this unit.

While the 2d Battalion, 1st Light Artillery, could lend valuable assistance from its present position, advantage of the present artillery superiority had better be taken to withdraw this battalion to Marysville Ridge. Once on this ridge, its fire can reach the right of the Blue detachment and be kept up continuously. In addition, it will be in a position to cover the eventual withdrawal of the 1st Battalion, 1st Light Artillery.

The whole firing line should not retire in one body, as the pursuit might be too close for the re-formation of the regiments. If small fractions of the line are pulled back, the remaining ones, being too weak for resistance, may be captured or destroyed. The 2d Infantry should hold for a short time, while the whole firing line of the 1st Infantry falls back to the cover of the ridge south of 606. The 2d Infantry, supported by its reserve and the detachment's covering force, can then be pulled out as a unit. The ridges south of 606 and near Store favor such a withdrawal.

There is little or no time available for further collection of the wounded. The ambulance company should transport to the rear those already collected and leave a few medical attendants for the care of the uncollected. All trains should be sent across Little Conewago. A re-supply of ammunition will be needed, therefore all the combat wagons should join their organizations east of Marysville Ridge.

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There is no time for a combined or written order. Individual telephone and written messages should be used. After the withdrawal is well under way, General A should go to Marysville and organize his defense at that point. Information of the situation should be sent to the division commander.

ORDERS

General A issues orders as follows: 12:02 PM

To the commanding officers, 1st Battalion, 2d Infantry, and 2d Machine Gun Battalion:

"Have your commands move south along Brush Run. Final orders later."

To artillery commander:

"Have one battalion fire on Reds approaching M. Fink."

To all officers present with him: 12:04 PM

"Take this down:

"Head 2d Division reaches Brushtown 2:00 PM.

"Our cavalry is delaying Red infantry and artillery approaching our right via Guldens. Hostile infantry is marching southeast on 617—562—M. Fink road. Head now near M. Fink.

"We withdraw at once to Marysville—Font ridge.

"Firing line moves via Fleshman and Breashner, 1st Infantry first.

"1st Battalion, 2d Infantry, 2d Machine Gun Battalion (less 2 companies), 2d Battalion, 1st Light Artillery, and 1 platoon, Troop A, now near Bonneauville, Major B, commanding, cover withdrawal from ridge north of Square Corner.

"2d Battalion, 1st Light Artillery, moves by echelon and without delay to position near Marysville and then covers withdrawal of right.

"1st Battalion, 1st Infantry, from just north of this point, covers withdrawal 1st Infantry and later retires via Store.

"Company E, 1st Engineers, to Marysville.

"4th Ambulance Company moves with all wounded it can carry to Brushtown, via Centennial.

"Combat wagons join organizations east of Marysville.

"Field trains to McSherrystown.

"I shall leave here for Marysville at 12:45 PM.

"Move out.

"Lieutenant P, deliver that order to commanding officer, 1st Infantry, and Lieutenant X to commanding officer, 2d Infantry. Return here.

"Brigade adjutant, send extracts of that order to ambulance company, engineers and trains. Have a telephone line established between Square Corner and Marysville."

General A has the commanding officer, 1st Infantry, on the telephone and adds to the above order: 12:08 PM

"1st Squadron, 1st Cavalry, will cover your right. When your reserve battalion is in position north of 606 withdraw via Fleshman and assemble northern edge of Marysville."

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12:12 PM General A has the commanding officer, 2d Infantry, on the telephone and adds to the above order:

"Increase your fire to assist 1st Infantry. Cover your left with your reserve. When I so order, you withdraw via Breshner and assemble east of Trostle."

12:14 PM To brigade adjutant:

"Send this message to 1st Cavalry:
"I withdraw to Marysville Ridge. When forced to, you retire via New Oxford, covering our right. Messages to Marysville after 12:45 PM.
"Send message to platoon, Troop A, for it to report to Major B."

12:16 PM To brigade adjutant:

"Send this message to division commander:
"Superior Reds now approaching from northwest force me to fall back to Marysville Ridge. I will cover Hanover Road."

12:18 PM General A meets the commander, 1st Battalion, 1st Infantry, and tells him:

"You hold this position until after the 2d Infantry passes the Fleshman—Shutt farm road. Then retire via Store."

12:40 PM. As the last element of the 1st Infantry is seen passing Brush Run, General A directs the commanding officer, 2d Infantry, by telephone, to commence his withdrawal.

12:45 PM General A goes to Square Corner and confers with the commander, 1st Battalion, 2d Infantry. He informs him:

"Hold this position until I order your withdrawal. You will fall back towards W. E. Palmer. I go to Marysville."

Map Problem—Withdrawal From Action

MAJOR HUGH A. DRUM,
Infantry

Maps: General Map Gettysburg-Antietam, 1"=10 miles.
Gettysburg-Antietam Map, 1:21120, Emmitsburg, Knoxlyn, Taneytown, Kingsdale Sheets.

General Situation:

The western edge of South Mountains forms the boundary between Red (east) and Blue (west) states. The Blues, having a slight advantage in concentration, are in-

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vading on the front Shippensburg—Greencastle. Red frontier troops are retiring eastward. The opposing army cavalry forces are in contact east of Thurmont.

PART I

Special Situation (Blue):

On June 2, 1920, the leading elements of the 3d, 2d, and 1st Blue Divisions, covering the advance of the army, debouched from the mountains at Arendtsville, Cashtown and Emmitsburg respectively. Red forces of all arms were encountered in increasing strength on June 3, 1920, on the general line Goldenville—Gettysburg—Bridgeport.

Early on the morning of June 3d, the 1st Division, moving east on the Emmitsburg—Taneytown road with the mission to secure the crossings of the Monocacy, encountered a strong Red force holding defensively the hills east of Middle Creek astride the above mentioned road. The 1st Division attacked with the intention of enveloping the Red left.

At 9:00 AM the 1st Division is located:

1st Brigade (less 1st Infantry):

2d Infantry (less 2 companies) deployed astride the Emmitsburg—Taneytown road; center at second farm house west of road junction 422, left 600 yards to the north, and right 600 yards to the south of said house. Two companies in regimental reserve in creek bottom south of hill 421. Regimental command post on farm road north of hill 421. 2d Machine Gun Battalion (less 2 companies with 2d Infantry) near hill 421. Brigade command post at road junction 410 east of Emmitsburg.

2d Brigade:

3d Infantry (less 2 companies) deployed south of 2d Infantry along improved road passing through road junction 399 and along wire fence to the north; left joining 2d Infantry and right at road junction 399. Regimental command post and two companies in regimental reserve in orchard 1,000 yards northwest of road junction 399. 4th Infantry (less 1st Battalion) deployed west of 399—419 road; right at farm house north of 419 and left near road junction 399. Regimental command post at farm house south of hill 361.

1st Battalion, 4th Infantry, in brigade reserve at road junction 405 south of hill 469. Brigade command post and 3d Machine Gun Battalion (less 2 companies with regiments) on southern end of hill 469.

1st Field Artillery Brigade:

Brigade command post at Emmitsburg with division command post. 1st Light Artillery southeast of Rose Hill supporting 1st Brigade. 2d Light Artillery west of hill 443 (east of St. Joseph's College) supporting 2d Brigade. 3d Heavy Artillery just west of Emmitsburg firing on hostile artillery.

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Division Reserve:

1st Infantry and 1st Machine Gun Battalion at western exit of Emmitsburg. 1st Engineers (less 1 battalion with trains) is at same place. 1st Field Signal Battalion is at division headquarters at Emmitsburg.

1st Squadron, 1st Cavalry: The squadron (less Troop A) near hill 604 (northeast of Cumps Mill) observing Red cavalry east of 487—486 ridge; Troop A is east of Motters covering the right.

1st Observation Squadron operating from field near Zora.

Division Headquarters:

1st echelon at Emmitsburg; 2d echelon at Fountain Dale.

Trains:

All combat trains are refilling at Zora; all field trains (combined), including rolling kitchens, are parked west of Zora; 4th Ambulance Company, south of Rose Hill; 1st Ambulance Company, St. Joseph's College; 1st Field Hospital Company, Zora. Rest of divisional trains are parked at Fountain Dale.

Railhead: Waynesboro.

The Blue attack has been held on the line indicated above by Reds in position on the line, woods 500 yards northeast of road junction 422—hill 466 (east of road junction 422)—hill 443 and hill 467 (east of road junction 399). Red artillery, located in the area of hill 464 (northeast of Thomas Creek Church), seems equal to Blue artillery.

At 9:00 AM, General A, commanding the 1st Blue Division, is aware of the following:

At 8:45 AM a Red infantry force (strength undetermined) was located just east of road junction 438 (west of Bridgeport).

The Blue divisional air service is locally superior and has reconnoitered the crossings of the Monocacy within a radius of five miles without learning of Red troops. The Blue army air service reports that leading elements of a Red infantry division had turned west at Silver Run village at 8:30 AM, marching toward Green Valley S. H.

The 2d Blue Division is engaged astride the Baltimore Turnpike at Rock Creek.

Required:

A brief statement of any decision made by General A at this time.

Time allowed: One hour and ten minutes, when Part II will be distributed.

NOTE:—Middle and Toms Creeks are fordable anywhere without difficulty.

PART II

General A decided to launch his reserve (less engineers) without delay against the Red right. The 1st Infantry, accompanied by the 1st Machine Gun Battalion, moving via

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the Emmitsburg—488—542 road, will cross Middle Creek north of Cumps Mill and attack southeast. The left center of this attack will follow the farm road running southeast from road junction 437. The 1st Infantry attack will leave the cover of the ridge northeast of Cumps Mill at 11:45 AM, when the entire division (less 1st Battalion, 4th Infantry) will press the attack. The 1st Battalion, 4th Infantry, will be held at General A's disposal.

By 12:30 PM, General A, commanding the 1st Division, has received the following:

1st Army,
CHAMBERSBURG,
3 June 20, 12:05 PM.

General A:
(By radio in code.)

In view of Red strength to south, army crosses mountains via CASHTOWN and to north. Leading elements 4th Division reach ORRTANNA at 10:00 AM tomorrow. Co-operate with 2d Division to insure army's debouching. Your refilling point tomorrow evening ORRTANNA.

X,
Comdg.

2d Div,
GETTYSBURG,
3 June 20, 12:10 PM.

General A:
By radio in code.

Due to Red strength on my left and army orders, I am retiring to HERR RIDGE. 3d Div co-operates. My right will rest about one mile southwest of BLACK HORSE TAVERN reaching there by 4:30 PM today.

Please co-operate.

B,
Comdg.

At this time (12:30 PM), General A is aware of the following:

The 1st Squadron, 1st Cavalry (less Troop A), has moved to hill 728 (southeast of Fairplay) opposing stronger Red cavalry.

The Blue assault, made at 11:45 AM, failed to make progress anywhere on the whole front.

The 1st Infantry (less 1st Battalion) has been stopped on the line—astride the first farm road junction about 900 yards southeast of Cumps Mill, left at orchard east of road junction 437 and right on spur just north of left of 2d Infantry. 1st Battalion, 1st Infantry, is in reserve in ravine 500 yards north of Cumps Mill. The 1st Machine Gun Battalion is in action on hill 591. Regimental command post at road junction 437.

The Red line has been extended to the northeast paralleling the 1st Infantry line. Small Red infantry groups have been observed at road junction 404 (346.1—733.5) and hill 464 (east of Thomas Creek Church).

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On the rest of the front, no important changes have occurred. The Blue casualties are estimated at 1,200.

The leading elements of the Red Silver Run column turned west at 11:30 AM at road junction 535 (1 mile east of Lambert).

At this time (12:30 PM), the following officers are with General A at Emmitsburg: the chief of staff, artillery brigade commander, one general staff officer and three aids. Telephonic communication is operating from division headquarters to all brigade commanders and to colonel, 1st Infantry.

Required:

1. A brief statement of any decision General A makes to meet the existing situation.

2. Any orders as actually issued in the next half hour by General A and his chief of staff.

Time allowed: Two hours and fifty minutes.

An Approved Solution

MAJOR H. A. DRUM,
Infantry

PART I

Decision

General A decides to launch his reserve (less engineers) without delay against the Red right. The 1st Infantry, accompanied by the 1st Machine Gun Battalion, moving via the Emmitsburg—488—542 road, will cross Middle Creek north of Cumps Mill and attack southeast. The left center of the attack will follow the farm road running southeast from road junction 437. The 1st Infantry attack will leave the cover of the ridge northeast of Cumps Mill at 11:45 AM, when the entire division (less 1st Battalion, 4th Infantry) will press the attack. The 1st Battalion, 4th Infantry, will be held at General A's disposal.

PART II

First Requirement:

General A decides to withdraw without delay to a position between McKee Knob and H. E. Boyd. The withdrawal

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of the fighting line will be by echelon from south to north. The 1st Brigade (less 2d Infantry), reinforced by the 1st Light Artillery, 1st Machine Gun Battalion, 1st Battalion, 1st Engineers, and 1st Squadron, 1st Cavalry, will cover the movement, retiring on General A's orders toward Diehl's Mill.

Second Requirement:

General A states to his chief of staff: 12:32 PM

"Halt the attack. We withdraw."

General A states to the officers present: 12:37 PM

"Take this dictation:
"Red division approaching by Harney. 2d Division is retiring to Herr Ridge.
"We retire to ridge northeast McKee Knob. Withdrawal by echelon from south to north.
"2d Brigade withdraws at once—direction west to Frederick Turnpike then to assembly point at Orendorf. Keep south and west of Toms Creek. Hold one regiment along Emmitsburg Railroad.
"1st Brigade retires on my order and covers movement.
"Captain P (general staff officer), transmit that at once, first by telephone and then in person to commander, 2d Brigade."

General A continues to the other officers: 12:40 PM

"1st Brigade (less 2d Infantry), 1st Light Artillery, 1st Machine Gun Battalion, 1st Battalion, 1st Engineers, and 1st Squadron, 1st Cavalry (General B, commanding), cover withdrawal, retiring on my order northwest toward Diehl's Mill. 1st Battalion, 1st Engineers, moves at once to hill 443 (east of St. Joseph College) reporting to General B. 2d Infantry retires with left of 3d Infantry—direction Stone Hurst where it assembles and moves north to Liberty Hall S. H.
"1st Squadron, 1st Cavalry (less Troop A), holds 604—728 ridge covering our left until further orders from General B. Troop A covers our right.
"Lieutenant O (aid), transmit these instructions at once in person to General B and by messenger to colonel, 1st Engineers."

General A continues to the other officers: 12:48 PM

"Artillery brigade covers withdrawal from present position. Retire on my orders 2d Light Artillery and 3d Heavy Artillery to position west of Diehl's Mill.
"1st Observation Squadron, observes closely Red column and roads crossing Rock Creek north of Harney.
"Move trains to vicinity of Fairfield Station.
"I go to 1st Brigade, returning here at 1:20 PM."

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12:50 PM The chief of staff states to assistant chiefs of staff, G1 and G3 and Captain R, General Staff, having handed them a copy of the dictation:

"Captain R, take that order at once to 1st Squadron, 1st Cavalry, sending a message to Troop A. Other officers please take notes.

"*Routes of movements*:

"3d Heavy Artillery preceding 2d Brigade via Orendorf—570—539—650 road on Fairfield.

"2d Light Artillery following 2d Infantry via Stone Hurst—483—493—Liberty Hall S. H.—Diehl's Mill—585 road.

"2d Brigade, on later orders, follows 3d Heavy Artillery.

"2d echelon and division trains (less detachments) to Virginia Mills.

"Field trains and 1st Observation Squadron to Fairfield via road west of McKee Knob.

"4th Ambulance Company to General B's command. Rest of sanitary train in operation to precede 3d Heavy Artillery, leaving necessary attendants to care for casualties.

"All combat trains (less those of General B's command) to join their organizations on routes stated. General B's combat trains move at once from Zora via Liberty Hall S. H.—511 road southeast to 545 crossroads and await his orders.

"1st echelon to Fairfield at 3:00 PM. Division axis—Emmitsburg—Stone Hurst—Liberty Hall S. H.—Diehl's Mill—Fairfield."

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(C) RAIDS

MAJOR L. J. MCNAIR,
Field Artillery

Raids are of historical interest to Americans, due to the fact that it was during a raid by the Germans on the 1st Division on the early morning of November 3, 1917, that the first American soldiers were killed in the World War.

The critically important part that may be played by raids, even in large operations, is exemplified by the German offensive launched on the morning of July 15, 1918, against the French lines east and west of Rheims. A raid at 8:00 PM on the 14th had given reliable information that the attack previously expected would take place on the morning of the 15th. Based on this information, at 11:00 PM on the 14th, the French artillery began its counter-preparation along the entire front. The German preparation did not begin until 12:10 AM on the 15th. The Germans sustained a costly repulse, and barely succeeded in reaching the French main line of resistance, penetrating it nowhere.

DEFINITION

A raid is an entrance into the hostile front for a brief period of time by a relatively small force; in other words, overcoming the enemy locally and temporarily.

A raid and an attack are similar, in that they are both offensive in character; but the attack differs in that it aims to hold its gains.

Raids are incident to a situation where the opposing forces are in close contact. Raids are thus distinct from reconnaissances made to discover the enemy, or regain contact which has been lost.

OBJECT

As a rule, raids are primarily to gain information; secondarily, in some cases, to effect destruction and cause losses, to perfect or maintain training, and to raise the morale of our own troops and lower that of the enemy.

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Information is gained by raids in the following ways:

Capture, identification and examination of prisoners, documents, etc.

Reconnaissance of hostile dispositions, infantry, special weapons, artillery.

Inducing the enemy to disclose his dispositions and strength in his attempt to defeat the raid.

Destruction and losses inflicted on the enemy are not in themselves ordinarily sufficient to make raiding profitable; but nevertheless these may be an important incidental result, adding considerably to the value of the maneuver.

For green troops, raids are admittedly valuable to give offensive battle training, inspire confidence, and thus build up an aggressive spirit, before hazarding a serious tactical enterprise.

The necessity of raids for their effect on morale varies with the situation. For troops on the offensive, they are not necessary; and for troops retiring before the enemy, they would hardly be an important factor. But in a long period of stabilization such as existed on the western front during 1915, 1916, and 1917, the maintenance of morale, generally, and the aggressive spirit, particularly, become serious problems. Raids are especially valuable in such a situation, serving as they do the other useful purposes pointed out above.

It must not be overlooked, however, that raids which are faulty in plan or preparation may be *failures*, which are not only costly, but tend to discourage.

CLASSES

It is difficult to make a classification of raids; they vary from a small patrol of say five men to an operation by all arms which, at the time, has every essential aspect of an attack. An example of the latter was the demonstration by the 26th Division on September 26, 1918, concurrently with the beginning of the Meuse-Argonne operation. Two battalions of infantry attacked the front Riaville—Marcheville (both inclusive), some 2,000 meters, to a depth of 3,000 meters. They were supported by the entire division artillery, with co-operation from the corps artillery. The attack began at daybreak and the captured position was

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held until nightfall. Strictly speaking, therefore, the operation was a raid, but for practical purposes it was an attack.

The only classification that will be attempted is:

(a) Unsupported raids, in which the raiding troops operate without fire support from the special weapons, such as machine guns, trench mortars, tanks, artillery. These are sometimes called *silent raids.*

(b) Supported raids, in which the raiding troops are supported by some or all of the special weapons.

Unsupported raids usually are conducted at night, supported raids by day, although this is not always the case. Supported raids may be launched with or without a preliminary fire preparation.

It is not too much to say that no two raids, if planned to best advantage, will be exactly the same. One of the important elements of success in raids is surprise, not only in time, but in dispositions, locality, strength, methods and in every way possible. In this way, the enemy never knows just what to expect and can make no precise dispositions to frustrate the operation.

Unsupported Raids

When the object of a raid is simply the capture of prisoners, our experience indicates that the small patrol is the most effective method. Ordinarily one or a few prisoners suffice as well as a greater number. A small patrolling operation, well planned and skillfully executed, will usually accomplish the desired result; and the method is simple, direct, rapid, and economical in point of effort and men.

In this connection, the following is quoted from the *Infantry Drill Regulations*:

"Patrols sent out for the capture of prisoners should be stronger than reconnoitering patrols, 5 to 15 men. . . . Before departure, patrols should have studied the ground to be covered from maps, airplane photographs, and observation posts. In case the mission is the capture of prisoners, they should be familiar with the habits of the enemy, the routes followed by his patrols, the location of his sentries, advanced listening posts, etc. The best means of capturing a hostile patrol is the preparation of an ambush along its route; stalking hostile patrols should in principle be avoided. . . . All men of the patrol should know the time and place of departure, the route to be followed, the time and place of return, and the signals for communication with each other. . . . The formation of the patrol will vary according to circumstances. Generally, some form of wedge formation which

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permits the patrol to form rapidly for action in any direction is most effective. . . . The return journey of the patrol should be made by a different route from that followed in its advance. . . . These (night) patrols always have a definite mission: to reconnoiter such a point; to prepare an ambush at such a place, etc. . . . The officer sending out the patrol determines the time and point at which it will leave the lines, ... the route, and the probable time and place of return. This information is communicated to watch officers, neighboring companies, and artillery, trench mortars, and machine gun units covering the sector."

Under some conditions, the capture of prisoners by daylight patrols is possible; there were instances of this action in France. Ordinarily, however, the necessary concealment can be obtained only at night.

The size of patrol varies; too large a patrol is difficult to conceal, while too small a one is too weak to act effectively when the proper moment arrives.

The following is an account of the ambush of an American patrol in France:

"The American patrol of 14 men was inspecting the wire in front of the company sector after dark. The men were moving in single file; the entire patrol covered about 30 yards' distance. The sergeant in command who was leading halted upon hearing a slight noise. He called forward a corporal and a private. The patrol then resumed its advance, but after proceeding a few paces a shower of grenades fell in the column and a body of Boche rose up in front and at least on one side, shooting, throwing grenades and yelling *'Kamerade.'* They seized the four men at the head of the column (the sergeant had fallen wounded) and disappeared in the dark. The affair lasted about a minute and a half, our men returning the enemy's fire with rifles, revolvers and hand grenades. We had five men killed, one wounded and four captured."

SUPPORTED RAIDS

If the situation requires that the raid be carried out by a force of infantry stronger than a small patrol, such a force can hardly expect to find protection in concealment. If it is discovered early enough, it almost certainly will sustain heavy losses, and be subject to failure in its mission. Accordingly, these larger raids are supported by the auxiliary arms.

The supporting weapons are used, in general terms, to neutralize as completely as possible all of the defensive power which the enemy can bring to bear on the raided point, either in the form of men or fire power. Under this protection, the raiding troops carry out their mission and

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withdraw. If the protection is complete, as it should preferably be, the raiding troops operate with relatively little fighting and with slight losses.

It was a raid of this type that was sustained by the 1st Division on November 3, 1917. The raiding troops numbered 200 to 250 men, with 5 officers. They were supported, according to reports, by 16 batteries of artillery. They were in the American position about 10 minutes. The Americans lost 3 killed, 5 wounded, and 12 prisoners; the Germans, as far as known, lost 1 killed and 1 wounded. A board of officers, convened to investigate this raid, stated in part as follows:

> "Such a raid, elaborately prepared, made by picked troops and supported by heavy and accurately placed artillery fire, will almost certainly succeed in obtaining some prisoners."

As between the patrol raid and the supported raid, it can be stated only that the former is preferable when it will accomplish the desired results; some officers maintain that this always will be the case. The supported raid, however, has been found necessary in the past, and it hardly seems warranted to assume that there will be no occasion requiring its use in the future.

The supported raid is costly in ammunition; for example, the joint raid by the French and the 42d American Division in the spring of 1917 in the Baccarat sector. The German lines were raided at two points with a demonstration and reconnaissance at a third point. The infantry troops numbered about 1500. The fronts raided were about 350 and 550 meters at the two principal points. The artillery involved was 148 pieces of 75 caliber and above, and 50 trench mortars. There were 86 machine guns. The ammunition consumption was 36,000 rounds by artillery and trench mortars, and 455,000 rounds by machine guns.

Selection of Point to be Raided

The suitability of the point raided has a bearing on the probability of success. The following are considerations:

> The point selected should be one that is difficult for the enemy to defend; for example, salients, much dead space, limited field of fire, covered approach from our lines. Marshes oblige the enemy to scatter his forces, and make reaction difficult, but they favor ambush.

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There should be dugouts or shelters in the area, or other indications that there will be enemy personnel to capture.

Numerous communicating trenches favor reactions by the enemy.

Habitually active patrolling and alertness by the enemy make it difficult to surprise him.

Proximity of the point raided to our lines, and the absence of serious obstacles or ground difficult to traverse make for celerity in the operation and facilitate its support.

INFANTRY PLAN

A simple, clear cut plan, thoroughly understood by all of the raiding troops, is essential. The various forms of maneuver recognized as advantageous for the attack are applicable to raids, but complicated maneuvers generally will result in confusion and failure if the enemy is skillful and alert. If the enemy position is suitable, a plan whereby the raiding troops advance and return by different routes is to be desired.

The raiding troops are generally subdivided into parties having in view a specific mission for each. An officer should command each such party. The subdivisions generally comprise two classes, one for attacking and cleaning up specified points, and the other for protecting the first while it is at work. The protecting groups embrace advanced security detachments, which cover the rear in withdrawal, and flank guards. Supports are sometimes advisable, as are also detachments for handling prisoners. The exact dispositions vary with each case; the detachments should be as few as possible, but on the other hand it is necessary to anticipate contingencies, for command during a raid is difficult.

The formation of the infantry is in general that suitable for the attack, either with or without the rolling barrage, as the case may be.

TRAINING

Training for the particular operation in hand, that is, rehearsals, are very valuable in order to give each man a clear understanding of his mission. This training preferably is carried out on terrain selected for its similarity to that at the point to be raided. The hostile position is indicated as clearly as possible. Such a training may vary from a day to several weeks; a short period makes for secrecy of the plans.

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PERSONNEL

It was the custom in the French and German armies during the World War to maintain special raiding detachments, "circuses," *corps d'élite*, as they were called. This practice was never favored in our service, but it is generally advisable to select the troops from the same battalion or company, in order to secure agile, intelligent, well trained men, thus lessening the chance of casualties and mistakes and insuring the maximum of fighting power.

EQUIPMENT

The equipment varies with the kind of operations contemplated; it is different by night than by day. The rifle and bayonet are rarely discarded, except in special circumstances, such as patrol raids; pistols and trench knives are preferable in trenches; grenades are usually carried in limited quantities; some wire cutters are usually necessary. Covering parties have automatic rifles and rifle grenades. Helmets are frequently not worn, particularly when operating by stealth, "as they click when striking a piece of barbed wire, show an unmistakable outline, and prevent crawling with the face upon the ground." All insignia are omitted, and some identifying mark substituted, as brassards. Luminous watches and compasses are essential, but should be covered. It has been found useful for officers to carry rattles to attract attention. The clothing is covered when necessary to blend with the terrain, as for example, white clothing in the winter, faces and clothing smeared with mud, etc.

HOUR OF RAID

Supported raids most frequently are carried out at dawn, twilight, or in similar conditions. Thus extensive observation is prevented, yet there is enough light for hand-to-hand operations. There are examples, however, of raids of this type being carried out both in full darkness and by day. An unexpected and unusual hour adds to the surprise.

RECALL

The completion of the raid and the return may be by prearranged time signal. For small raids, the latter is pre-

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ferable. The signal is given by the raid commander, either by bugle, signal horn, or rocket. The sound signal is apt not to be heard; the visual signal may not be seen or other signals may be mistaken for it.

Supporting Weapons

The mission of the supporting weapons, artillery, machine guns, trench mortars, and one-pounders, is to destroy or neutralize the hostile positions within effective radius of the point raided, prevent counter-attack or reinforcement of the threatened point, and in some cases to make demonstrations at other points to deceive the enemy. There may or may not be a preparation; the considerations are in general the same as in the case of an attack. The tendency should be rather more, however, toward the short preparation, since even a brief warning in the case of a raid will permit hasty dispositions or local reinforcements that are apt to be sufficient to defeat the operation. Surprise and swift execution are prime essentials of a successful raid.

The support during the raid consists of a neutralization of the known or suspected hostile positions, generally a rolling barrage in advance of the infantry, and the isolation of the area raided by a standing barrage wholly or partially encircling it on the enemy's side. The latter, called the box barrage, prevents the occupants from fleeing and excludes reinforcements.

In the French-American raid previously referred to, the assignment of artillery to the various missions was as follows:

50 medium and heavy trench mortars: Principally wire cutting.
116 light guns: 30 for blinding observation posts, 54 for counter-battery, 32 for box barrage and covering fire.
16 pieces of 120 caliber: 3 for blinding observation posts, 13 for counter-battery.
16 155 howitzers: All for demolition and bombardment of hostile trenches.

The question of wire cutting by the artillery or trench mortars has the same aspects as for an attack. Our experience indicates that, unless the wire is extremely strong or powerfully protected, it is more quickly and effectively cut by the infantry as it advances.

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DEFENSE AGAINST RAIDS

The principal element in the defense against raids is to secure timely warning by means of active patrolling and the vigilance of sentries. With suitable warning, the normal means of defense can be brought into play, and the raid met with some prospect of success; without warning, there is little hope of defeating a well executed raid.

The board of officers reporting on the raid against the 1st Division on November 3, 1917, states as follows in this connection:

> "No patrols were sent to the front. The ground between the opposing trenches was distinctly German ground. Our troops must make no man's land distinctly American land. The long presence of Germans about our wire and the deliberate preparations for the raid would hardly have been possible if the American troops had done any patrolling. And certainly when their presence became evident, strong patrols should have been sent to drive them off instead of resting content with a little firing. (The excuses offered are not sufficient: i. e., that the French have laid many traps in front, that the difference in language would lead to the French firing into our patrols, and that the experience of previous battalions shows that our patrols are likely to suffer from their own fire.) The battalion is now under orders from higher authority to send out strong patrols, each of an officer and 25 men. These patrols are too large to be easily concealed and they offer a great mark for any hostile party to ambush."

TANKS

Both the British and Americans made raids with heavy tanks followed by a small infantry force. A moderately successful raid of this type was carried out on the night of June 22-23, 1918, near Bucquoy, with 3 platoons of infantry and 5 heavy tanks.

A favorable point of departure would be a reentrant in the line, say 400 yards across. The tanks leave from both flanks of the reentrant, with the infantry following in their wake close under the shelter of the tank itself. The tanks enter the hostile lines, tear up the wire, effect destructions, and the infantry troops capture prisoners; the return is by the other flank. The tanks are placed in positions secretly, the noise being drowned by low flying airplanes or by fire of machine guns.

ORDERS FOR RAIDS

There is no fixed procedure in the initiation of a raid. A division commander may receive an order from the corps

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or army stating merely that prisoners are desired. The division commander in turn would delegate the task of obtaining them to a brigade commander, who would transmit the order to unit of his command, which would send out a patrol and get the prisoners. Or the division commander might order a larger raid by a message or letter specifying some or all of the following details: Point to be raided, how far the raid is to penetrate, the approximate date and hour, the strength of the party, units available to support the raid. The number of these details prescribed would depend on the size of the raid and the degree of supervision the division commander felt it advisable to exercise; all details might well be left to the subordinate. The division commander might direct the submission of a plan for his approval. Such a plan might well be the raid order itself.

A large raid might be regulated in some detail by a corps or army. The raid order would be signed, in most cases, by the commander of the unit from which the infantry troops are drawn.

The following is a suitable form of order for a raid. It covers the raid described in the first of the examples given hereafter. The details prescribed in the order are those actually employed. The order for a larger raid would be similar, except that there would be various annexes and if necessary an administrative order.

1st Bn 26th Inf,
FRANCE,
24 June 18.

FIELD ORDERS }
No — }

(Plan Directeur, St. Juste-en-Chaussee, 1:20000.) In Map Pocket.

1. The enemy holds the CHATEAU WOODS in our front with one bn. Our dispositions remain unchanged.
2. Troops selected from Co D will raid the hostile position on D day at H hour.

Troops:
Raiding troops:
Lt ____

(a) Assault parties:
3, each consisting of
1 officer, 1 sgt, 2 corps, 12 pvts
Left, Lt____
Center, Lt____
Right, Lt____

Line of departure: Front line trench at 122.6—330.3.

Point of attack: Trench junction at 122.8—330.4.

Direction: Along trenches to north and northeast to north edge of BOIS DE FONTAINE, returning along north edge of woods.

Mission: To capture prisoners and documents.

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(b) Support:
Lt____, 2 sgts, 2 corps, 18 pvts

(c) Left flank guard:
Lt____, 1 sgt, 2 corps, 12 pvts

Supporting troops:
(e) 7th LA, Col____

(f) MG Co 26th Inf, Capt____

(g) Stokes Mortar Plat, 26th Inf, Lt____

3. (a) On commencement of the artillery preparation, the assault parties will advance, preserving their general alignment, as close as possible to the point of attack.

On entering the woods, the left party will proceed along the trench to the north, capturing or killing the occupants, to the north edge of the woods, whence it will return. The center and right parties will proceed together along the trench to the northeast on the north and south sides respectively, each assisting the other by enveloping any resistance encountered. Upon reaching the north edge of the woods, they will return.

(b) The support will follow the right assault party, assist any party requiring it, protect the right flank, and cover the retirement.

(c) The left flank guard, at H minus 30 minutes, will be in position in the eastern extremity of the BOIS DE CANTIGNY. During the raid, it will engage by fire any resistance developing from the north or northeast of the area raided. It will retire on completion of the raid.

(d) At H minus 10 minutes, the artillery will place a violent preparation on the hostile position in and about the area to be raided. At H hour this fire will become a box barrage about the area raided, continuing until the completion of the raid. (See attached map.)

(e) At H minus 10 minutes machine gun fire will be placed on 122.85—331.00 to 122.80—331.05, and on 122.90—330.70, continuing until the end of the raid.

(f) At H minus 10 minutes, the Stokes Mortars will concentrate their fire on the trench junction 122.8—330.4 and on the trench at 122.9—330.55. At H hour this fire will be lifted and disposed as shown on the attached map, where it will continue until the end of the raid.

(x) (1) The raiding troops will assemble in the trenches at about 122.1—330.0, at H minus 1½ hours.

The assault parties will there be formed abreast at 25 yards intervals, each party in column of files. The support will form similarly in rear of the right assault party.

The route of each party from the assembly point to the line of departure will be taped.

The formed parties will advance to the line of departure so as to arrive there at H minus 30 minutes.

(2) When he has assured himself that the raiding troops have returned within our lines, the raid commander will fire three one-star *red* rockets, repeating this signal until the supporting troops cease firing.

(3) All raiding troops will check in on return at the Bn Aid Station at BOIS EN TRIANGLE.

(4) Men of the assault parties will carry rifles, belts, bayonets, 40 rounds of ammunition, and 2 F-1 grenades; 4 men to carry 2 incendiary bombs each, 4 to carry wire cutters and trench knives.

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The support and left flank guard each will be equipped with 2 automatic rifles and 2 grenade dischargers; the remaining men carrying rifles, belts and bayonets.
All raiding troops will wear white brassards on both arms; gas masks will be carried at the alert; helmets will *not* be worn.
Officers and NCO's will carry luminous watches and compasses. Each officer will carry a rattle.
The raid commander will carry a signal pistol with the necessary cartridges.

(5) Men will be cautioned to pick up papers and other articles affording information.
The intelligence officer will be with the support and will attach one man to each assault party to collect papers and articles of like nature.

4. Four litter bearers, with two litters, will accompany the support to bring back our casualties.

5. (a) Communication: Between units of the raiding troops, by runner.
Between the advanced observation post and regtl CP, by TPS.
Between bn and regtl CP, by telephone.

(b) Command posts: Raid comdr, with the support.
Bn comdr, unchanged.

R,
Maj.

Distribution:
Comdrs raiding and supporting troops; regtl, brig, and div comdrs.

Examples of Raids

Two examples are given herewith of supported raids, one small and one large.

The first is a successful raid made by the 1st Battalion, 26th Infantry, 1st Division, on the morning of June 29, 1918, near Cantigny. This front was a relatively new one, having been established since the German drives beginning March 21. The trenches naturally were not as powerful as the older portions of the western front; there was some wire, but not in great quantity or strength. The morale of the enemy was high, as was also that of the 1st Division; the latter was by no means a green division.

The raiding troops numbered about 100 officers and men, all taken from one company. There was no special training for the raid, although the battalion previously had received training for raids in general. The hour was set at 3:15 AM, at which time there was just enough light to see. The raid lasted twenty minutes.

The plan was to place a ten-minute preparation of light artillery and Stokes mortars on the point selected, during

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which the assault parties moved up close to the hostile line. The artillery fire then formed a box barrage while the infantry rushed into the position, the point selected being a trench junction in a woods. The three assault parties then operated as follows: The left one followed along one trench, cleaning it up; the other two parties similarly cleaned up the other trench, where more resistance was anticipated. After working along their respective trenches for about 200 yards, the parties came into the open on the enemy's side of the woods, and retired along the edge of this woods back to their own lines; the whole route thus being a circuit. A support party followed the assault parties, protected the right flank, and covered the retirement. The left flank was protected by a party placed in a suitable position slightly in advance of our lines. The position and the routes followed are shown on the accompanying map.

The plan was a simple one, a noteworthy feature being that it called for the support only of the means normally available in the sector. The raid was carried out as planned. Thirty-three prisoners were taken, including 1 officer, 5 noncommissioned officers, 2 artillery observers and several heavy machine gunners. Several sacks of paper and other intelligence data were secured. Our casualties were 1 officer and 1 soldier killed and 4 soldiers wounded by shell fire. The casualties were withdrawn, except the body of the officer, which had to be abandoned and could not be recovered.

Further details are contained in the order previously given. Of special interest is the equipment carried by the various elements. The raid commander himself fired the signal indicating the conclusion of the raid.

The following extracts from the report of the battalion commander are of interest:

> "At the commencement of the shelling, . . . the enemy fired three green star rockets in succession. Nine minutes after the first was fired, the enemy barrage came down. The raiding party had, however, moved out sufficiently so that the shells fell in rear and only a few casualties resulted. During the bombardment, by our lights, the raiding party edged as close as possible to its point of entry. Immediately on the barrage lifting and coming down as a box, the parties advanced, preceded by the men carrying the wire cutters. It was found that the wire had been practically eliminated by the artillery and the position was imme-

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diately assaulted. The parties swung into the woods at the slow double. It was found that there were numbers of Germans in the second line trench (one covered by double party). B (center) party assaulted their flank; C (right) party swung around and took them in rear. The Germans were both in the trench and in funk holes hollowed in the front. They seemed to be taken by surprise and as a rule offered but little resistance. Where possible, they were captured, but where they showed any hesitancy, they were immediately bayoneted or shot. In some cases, they came promptly from their funk holes; in others, they made no response and incendiary bombs were thrown in. The effect of these bombs was such, in small funk holes, that the Germans were either killed instantly or absolutely disabled. . . . It was at this point in the operating that Lieutenant Freml (raid commander) was killed. . . . At the time of his death he had gone to A party on the left, to see that certain small posts, of which we were aware, were taken care of by them. A German jumped out of the bushes and discharged a pistol in Lieutenant Freml's chest. He died instantly. The German was killed immediately by a private with a bayonet. . . . Numerous instances occurred in this fight in the woods where the men showed up well. Lieutenant Dabney, leader of C (right) party, saw an officer and rushed to take him. While he was seizing him, he was attacked by three Germans; a private near him shot two and bayoneted the other with such force that the German was pinned to a tree, where the bayonet stuck so fast that it had to be left, the only piece of ordnance lost by the assaulting party. Men went into funk holes where armed Germans were waiting for them, when they felt papers might be there."

The second example, a large raid with elaborate artillery and machine gun support, is the French raid of Ervantes, in Lorraine, on February 20, 1918. The artillery preparation was considerably longer (8 hours) than later became customary in the great attacks during that year.

OBJECT

To obtain information, prisoners and documents, to effect destruction, and to develop the organization and strength of the enemy in the Foret de Bezange. (See map in map pocket. The map heading *incorrectly* states that this raid was by the 1st Battalion, 26th Infantry, June 24, 1918.)

TROOPS

Infantry, four battalions. (Note: The French battalion has four rifle companies nominally of 200 men each.)

Artillery: About 150 light guns, 1 per 12 meters of front.
About 90 heavy howitzers, 1 per 20 meters of front.
About 80 heavy guns, 1 per 22 meters of front.
Engineers: 2 companies of sappers, and 1 company of flame troops.

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Air service: 1 corps squadron, 1 division squadron, 2 additional squadrons for the artillery, 2 squadrons for protection, and 1 balloon.
Machine guns: About 200 for long range fire.

TERRAIN

The enemy held the north bank of the river Loutre, the position being on a plateau overlooking the river and about 70 meters above it, which constituted a formidable obstacle.

A national road (No. 74) passes through Moncel to the northeast, and ascends the plateau by way of a ravine. This ravine was the point at which penetration of the position was effected initially, the line to the west then being flanked and the attack pushed forward over a front of about 1200 meters.

INFANTRY PLAN

Two battalions were placed in the front line, the right and the left; the right battalion was reinforced by one company from the fourth battalion. The third battalion followed in the second line behind the left battalion. The fourth battalion (less one company) made a delayed attack on the left, protected this flank, and covered the withdrawal after the operation.

The battalion missions were as follows: The right battalion went from the French lines at Poirier in the direction of the Saillant des Hessois, left one company on the high ground to the east, followed up the Boyau de Karlsruhe, left another company on the high ground to the east at the head of the ravine, and with the two remaining companies attacked and cleaned up the Bois des Ervantes.

The left battalion started from the French line at Pétain in the direction of the Saillant des Saxons, one company then cleaning up the Tr. des Wurtembergeois, one company the area about the command post on the west slope of the ravine, and the third company the Boyau Rozebois and the works about the Rozebois Fme.

The third battalion followed the left battalion. One company cleaned up the Ouv. Central, via the Boyau Rozebois and the Boy. des 2 Fermes; one company, Les Ervantes Fme. and the shelters to the north, via the Tr. des Ervantes; and the remaining company, the shelters to the east of Les Ervantes Fme.

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At H plus 21 minutes, the fourth battalion (less one company) crossed the Loutre north of Moncel. One company took its post in the Tr. Noire; the other at the Source (Sce), the mission of the latter being to cover the withdrawal.

Each battalion advanced in column of companies, each company in line of sections in column of files. A detachment of flame throwers accompanied each battalion.

The infantry was preceded by a rolling barrage of both time and percussion shell. The barrage halted for 20 minutes on reaching the level of the plateau, to allow the infantry everywhere to catch up with it. The rate of the barrage was 100 meters in 3 minutes before the halt, and 100 meters in 4 minutes thereafter. The final limit of the advance was reached at H plus 90 minutes. After a delay of 45 minutes by the watch, the withdrawal was begun without further signal.

The withdrawal for the third and left battalions was by the Source, for the right battalion by the ravine whence they entered.

Artillery Plan

This covered counter-battery, neutralization of near and distant points bearing on the raided area, blinding observation posts, wire cutting, destruction of enemy works, a standing barrage along the hostile front line, boxing the ravine, boxing the entire raided area, and the rolling barrage. The standing barrage and the box barrage around the ravine joined the main box barrage as soon as the rolling barrage reached them. The rolling barrage used 18 batteries of light guns. The standing and box barrages took 18 batteries of light guns and heavy howitzers. The frontage per battery in the rolling barrage was 130 meters. Large proportions of gas and smoke were used.

The Action

The artillery preparation began at 7:30 AM, and at the same time the air forces drove the enemy planes and balloons to earth. The hostile artillery was neutralized as fast as it responded, there being an allotment of two French guns to engage every German one. At noon the intensity

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increased, and by 3:30, the hour of the raid, the preparation was complete.

At 2:30 PM, the engineers, leaving Moncel, began placing the foot bridges across the Loutre. This had to be done in the open, as the smoke screen did not prove effective. In 40 minutes they had completed the 24 bridges south of Moncel. At 3:00 PM, 19 were placed below Moncel in 30 minutes.

The infantry had about 1500 meters to advance before reaching the first enemy trenches. The crossing of the Loutre was not interfered with by the hostile artillery; what fire could be delivered was misdirected on another portion of the line. But machine guns caused serious difficulty. The right battalion had to advance crawling, rushing one machine gun in the Boy. de Karlsruhe. The left and center battalions had temporarily to take shelter among the buildings of Moncel on the north bank of the Loutre. They found it necessary to give up use of the breaches in the wire made by the artillery, and the left battalion cut its own breaches along the national road. The machine guns holding up the advance were overcome after a time and the advance taken up all along the line. The infantry caught the barrage when it halted; when the barrage resumed its progression, it was followed closely throughout. Thereafter the raid was carried out without serious difficulty. At 5:05, an airplane signalled a counter-attack from the direction of Chapelle Saint-Roch (not on map), which the artillery broke up.

At the prescribed time, the raiding troops withdrew, with their casualties. The infantry returned to its billets that night. One regiment had marched 40 kilometers in 30 hours, of which 4 hours were the raid itself.

Results

Three hundred and fifty-seven prisoners were captured, together with 7 machine guns and various materiel. Much destruction was effected; 2 ammunition depots and many shelters were burned. The documents and prisoners permitted many identifications. This operation, with a similar one at Rechicourt to the south, enabled the identification of

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66 enemy divisions and 125 other units. Certain information was obtained as to the intentions of the enemy.

The French losses were 38 killed, including 2 officers, and 267 wounded, 200 slightly, including 11 officers.

Ammunition Consumption

Seventy-fives, 90,000 rounds; howitzers, 18,000 rounds; heavy guns, 2,000 rounds.

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(D-1) CONVOYS

(Including an illustrative problem)

MAJOR PELHAM D. GLASSFORD
Field Artillery

On land the term "convoy" applies to trains that are not sufficiently protected by the presence of the military force to which they belong. Convoys therefore are trains requiring a special escort; such as trains by which supplies to the army are forwarded along threatened lines of communication, or trains bringing in supplies collected by requisition. We also hear the expression, "A convoy of prisoners."

GENERAL CHARACTERISTICS

Convoys are peculiarly vulnerable as well as liable to an attack, and require more elaborate measures for their protection than a body of troops in the same situation.

The difficulties in controlling and protecting a convoy increase rapidly with its length.

Motor trucks are particularly advantageous for convoys due to their speed, the fact that they cannot be stampeded, and because they are less vulnerable than animals to injury by fire.

CONTROL OF THE CONVOY

An officer, with such assistants as may be available, is placed in charge of the transportation. He divides the train into sections and places a noncommissioned officer or wagon master in charge of each section. A police guard, usually detailed from the escort, is distributed along the train to preserve order, protect property, render assistance in case of accidents, and take part in the defense. With hired or impressed transportation a strong guard is required. As far as possible quartermaster sergeants, cooks, clerks and artificers are employed for this duty.

ORGANIZATION OF THE CONVOY AND CONDUCT OF THE MARCH

When avoidable more than one type of transportation should not be placed in the same convoy. Motor trucks should not be combined with wagons in the same train, as it is

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desirable to have all vehicles of a convoy of the same mobility.

A wagon convoy is usually divided into sections of from 20 to 30 wagons. The officer in charge of transportation prescribes the distance to be maintained between wagons and between sections, on the march and while halted. The rate of march of a wagon train is usually from 2 to 2½ miles per hour, including halts. Long halts are avoided. As a rule halts are limited to breathing spells in ascending long slopes, and delays to lock wheels on steep descents. The slowest teams are placed in the lead. Broken wagons are removed from the road, their loads being transferred to spare wagons or distributed among other wagons of the train.

Convoys of motor trucks are divided into companies of 27 cargo trucks each, with each company divided into three sections. The normal distances prescribed by motor transport regulations are:

	Travelling	*Halted*
Between companies	75 yards	75 yards
Between sections	40 yards	20 yards
Between trucks	20 yards	5 yards

The speed depends upon road conditions and the class of trucks composing the convoy.

Protection of the Convoy

Security for a convoy is furnished by an escort, the strength of which should be based upon the size of the train, the risk, nature of the country, length of the journey, and other tactical considerations.

Infantry will usually enter into the composition of an escort. For scouting and communication a force of cavalry is always a valuable addition with wagon trains. Armored cars and machine guns are useful, but artillery is generally not employed. Engineers are provided whenever the need for their services is anticipated. The escort must have equal or greater mobility than the train.

Commander and his Duties

The senior line officer on duty with the escort commands the convoy and is responsible for all measures neces-

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sary for its safe and steady progress. He confers with the officer in charge of the transportation and, if practicable, defers to the latter's wishes as to the hours of starting, length of marches, parking of the train, police guard, etc.

However, in the final decision on any question after the convoy is turned over to him, the authority of the convoy commander, subject to instructions from higher authority, is absolute.

Distribution of Troops

In addition to the relatively few men detailed as police guard and advance guard, a main body and a rear guard will generally be necessary for the protection of the convoy, and frequently a strong flank guard will be required. No fixed rule can be given for the relative strength of these various elements. In general, the strongest elements should be between the wagons and the known or supposed position of the most threatening force of the enemy.

Too much dispersion should be avoided and the mass of the troops kept within supporting distance. Distant reconnaissance is necessary, as the enemy must be kept from getting within range of the convoy. The advance cavalry or advance scouting parties need not be very strong. They reconnoiter 3 to 5 miles to the front and well to the flanks.

In the case of a small wagon convoy, the main body marches at the head of the column of wagons, with a small detachment in rear; or vice versa in the case of a retreat. If the train is very long, part of the main body should march in the middle of the column to protect the flanks.

While the advance guard is generally strong, the rear guard is usually small, unless danger is anticipated from the rear. A slowly moving wagon train may be menaced from the rear by small raiding detachments, and it is the duty of the rear guard to drive them off and keep them beyond effective rifle range on the convoy.

A flank guard, if used at all, should be put out because an attack is expected from that direction, and in that case it should usually be strong. A flank guard instead of march-

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ing continuously on a flank, can often obtain better results by successively occupying strong positions from which it can oppose the enemy, leaving each position and moving rapidly to the next as soon as the convoy has passed safely.

Reconnaissance is the primary and important function of cavalry with a convoy. If too weak in numbers to be effective in combat, even when concentrated, it may be split up into small detachments for reconnaissance, messenger service and police duty.

The March

The available routes should be carefully considered. Long distances, poor roads, steep grades, many stream crossings, sharp turns, defiles, close country, and exposure to view from considerable distances along an open ridge, are objectionable features. A few draft animals shot down by a handful of men in ambush would seriously delay the convoy.

Other things being equal, the best road, which may often be the most direct, is to be preferred. The route should be selected with a view to avoiding the enemy, and a detour is justifiable if it is certain that the enemy may thus be avoided.

Defense of a Convoy

The chief duty of the escort is to keep the enemy from gaining a position permitting effective fire on the train. With efficient security a convoy cannot be surprised.

The flanks of a convoy are its most vulnerable parts. If the enemy is reported near, the convoy is closed up and the march continued in the most orderly manner possible. It is formed in double column when the width of the road permits.

The escort fights only when necessary, and does not pursue to any great distance when the enemy is repulsed. If the enemy holds a commanding position, or a defile on the line of march, he is either dislodged by the escort or the convoy takes another road.

The advance cavalry reports the presence of the enemy with the utmost dispatch so that the commander of the

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escort may change the direction of march, park the train, or if necessary, begin a retreat.

If menaced by small parties of the enemy, a convoy continues its march under protection of the escort; if attacked by a superior force, the train is parked or a corral is formed, skirmishers being thrown out to delay the enemy and gain time for the formation. If a defensive position is necessary to protect the convoy, it should be selected some distance from the train and prepared for a stubborn resistance. Couriers should be sent out to apprise the nearest troops of the situation.

When a defensive position is taken up for the protection of the convoy, the enemy will endeavor in most cases to hold the escort in position with a small force, while he makes a turning movement with his main body in the direction of the convoy. To protect the convoy the escort will be required to keep itself interposed between the enemy and the convoy, which may require moving from one defensive position to another along the route.

If it is evident that the train cannot be saved, the escort commander endeavors to escape with the most valuable part, the remainder being destroyed as far as possible and the transportation disabled.

Defense of Several Convoys

Where several convoys are to proceed over the same route, the escorts may be combined, a suitable number of men detailed as police guards, and the bulk of the troops stationed along the route. This system is possible when the route is not too long, when the protecting force is sufficient, and when the terrain is such that a few defensive positions are adequate for defense. When possible, a containing force is placed in each of the defensive positions and a large reserve located at some central point, from which it can be quickly dispatched to any threatened locality. Good communications are essential.

Camping and Parking the Convoy

The advance guard commander examines the country with a view to selecting suitable places for camping or for parking the convoy should the enemy be encountered. He

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usually selects the camp sites, taking into consideration both protection and camping conveniences. The formation of the convoy in camp is made as compact as possible. The camp is protected by the necessary outposts.

When the enemy is known to be distant, a wagon train is usually parked in column of sections, or half sections, with distances of about 20 yards between subdivisions, and intervals of 6 to 8 yards between wagons. A compact formation is secured by placing the wagons axle to axle and tying the animals to picket lines in front of the wagons.

For purposes of defense wagons may be placed in two lines facing each other, or in the form of a square, rectangle, oval or circle, the poles inside. A diamond-shaped corral is recommended for emergencies, with all wagons faced in the same direction. It can be rapidly formed and the march quickly resumed. The animals outside the diamond are unhitched and placed inside. Openings are left where necessary.

Attack of the Convoy

The most favorable time for attacking a convoy is when it is passing through woods, a defile, or over a bridge; when it is going around a sharp bend in the road; when ascending or descending difficult slopes or passing over a bad section of the road; when the convoy is beginning to form a corral; when the teams are being watered; or, generally, whenever the conditions are such that the escort cannot quickly prepare for defense.

The attackers endeavor to bring the convoy to a halt, throw it into confusion, and engage the escort by a demonstration in one quarter while the main attack is launched from an unexpected quarter. The fire of artillery and of machine guns is very effective. A force, to attack successfully a well protected convoy, requires great mobility; hence the advantage of cavalry, armored cars, and motorized organizations.

If a convoy is captured, the parts that cannot be carried off are destroyed.

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Convoy of Prisoners

In addition to an escort to repel attempts at rescue, a guard of about 10 foot soldiers and several mounted men is generally required for every 100 prisoners. The captives are formed into companies and marched in column, their officers marching separately. Prisoners are treated kindly, but must be given to understand that any attempt to escape will draw fire. If the convoy is attacked, the prisoners are ordered to lie down. The presence of the prisoners is a protection to the escort, in that the enemy cannot fire, or charge with cavalry without endangering the prisoners.

Protection of a Convoy

Maps: General Map, Gettysburg-Antietam, in Map Pocket. Pennsylvania-Maryland Geological Survey Map, 1:62500. Six Quadrangles, Vicinity of Gettysburg.

The Potomac River is the boundary between the Reds (north) and Blues (south).

A Blue force has been checked in its invasion of Red territory and has fallen back to the line Heidlersburg—Hanover, with the Reds exerting strong pressure against the right flank. The Blue commander decides to change his advance base from Frederick to Hagerstown and later to withdraw to the passes of South Mountain.

In the meantime, a convoy of supplies essential to the Blue army, escorted by newly organized troops, has reached Keymar from Frederick, en route to Hanover. At Keymar, the commander of the convoy is apprised of the situation and receives orders to proceed to Gettysburg instead of to Hanover.

The convoy consists of 250 wagons, including three ambulances and the field trains of the escort. Following a long and tiresome march, the convoy and its escort, commanded by Colonel A, camped on the night of May 2-3 as follows:

Troops A and B, 1st Cavalry, and Mounted Section, 1st Engineers, with 4 pack outfits at Bruceville and Sharretts.
1st Infantry (less 3d Battalion) at Keymar.
3d Battalion, 1st Infantry, at Middlesburg.
Company A, 1st Machine Gun Battalion (motorized), at Keymar.
Battery A, 1st Light Artillery (carried on motor trucks), at Detour.
Train on Little Pipe Creek southwest of Keymar.

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The command was ordered to be ready to march at 5:00 AM, May 3d, commanders of cavalry, infantry battalions, machine gun company, artillery and train to assemble at Bruceville at 4:30 AM for conference with the commander of the convoy.

At midnight a spy reported that a platoon of Red cavalry reached Taneytown at 10:00 PM, and the troopers said they belonged to a regiment in bivouac at Piney Creek. They told of a large cavalry engagement near Littlestown in which the Blue cavalry had been driven back to Germantown during the late afternoon.

Required:

1. Colonel A's estimate of the situation.
2. Colonel A's formal field orders.

Estimate of the Situation

With the enemy's cavalry menacing Colonel A's right flank, he discards any idea of proceeding to Gettysburg by way of Taneytown and the Taneytown Road. The route through Emmitsburg is just as short and less exposed. Upon reaching Emmitsburg, Colonel A can expect to learn more about the situation, and can anticipate the possibility of another change in the destination of the convoy should the Blue army have commenced to fall back. Beyond Emmitsburg he will be near the new line of communications, and can expect to find troops within supporting distance, should the convoy be seriously attacked.

There is also a road west of Emmitsburg, skirting the hills, but this detour will not be justified unless the convoy is greatly in danger of capture.

Colonel A's mission is to deliver the supplies to the Blue army. By the shortest route Gettysburg is 21½ miles, and can be made in one day unless conditions are very unfavorable.

Having reached the decision to march by way of Emmitsburg, the next question Colonel A must decide is whether to send the wagon train over the shortest route to Emmitsburg, by way of Bruceville, Keysville and Four Points, a distance of 11¼ miles; or by a more circuitous

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and at the same time more protected route by way of Rocky Ridge and Appolds, about four miles longer.

The former route is about two hours shorter, and by commencing the march at 5:00 AM the head of the column of wagons should reach Emmitsburg by noon. But the road runs over high ridges exposed to enemy observation, and runs parallel and very close to the probable routes by which the enemy will advance. As Piney Creek is less than 14 miles from Emmitsburg, either by way of Taneytown or Harney, Colonel A cannot expect to reach Emmitsburg unmolested. He is in hostile territory, and the enemy will no doubt have information concerning the movements of this convoy.

By going west and then north into Emmitsburg there are two routes available. The wagon train can be sent in single column over either route, or can be split into two sections and both routes used. As the wagon train is nearly three miles long in single column there would be a great advantage in marching it in two columns. Leaving at 5:00 AM in two columns would be equivalent to leaving at 4:27 AM in one column, so far as the tail of the column is concerned, assuming that the train can make 2¼ miles an hour. Furthermore these two routes are about the same length and are nowhere more than a mile and a half apart. The two routes under consideration are as follows:

No. 1 (16 miles). Train camp, Mount Zion Church, Tollgate, Millers Bridge, Rocky Ridge, Washington School, Mount St. Marys, Emmitsburg.

No. 2 (15 miles). Train camp, Keymar, Detour B. M. 477, west and then north to Mumma Ford, Appolds, Motters, and into Emmitsburg on the road east to St. Joseph's College.

It seems obvious that Colonel A will decide to march the wagon train in two columns, using both of these routes. He decides to send a sufficient escort with each column, and to employ the bulk of his forces as a covering detachment to interpose itself between the train and the enemy's cavalry, taking up successive positions in readiness along the general line Bruceville, Keysville, Toms Creek Church, Hoffman Hill.

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He desires to get in touch with supporting troops to the north as soon as possible, and to learn more about the Blue situation. He therefore decides to send one or two staff officers in an automobile toward Gettysburg, by way of Emmitsburg, before daylight. He will send with this party a few armed men, and one or two motorcycle couriers in order that messages may be sent back before the automobile returns.

The enemy's cavalry, having engaged in combat the afternoon before, is probably not in condition to be over-aggressive; the wagon train has had a hard march and has a long march ahead, so that Colonel A sees no reason for moving forward the hour of departure.

He prepares the following order to issue when the commanding officers report at 4:30 AM:

COLONEL A'S FORMAL FIELD ORDERS

Blue Detachment,
BRUCEVILLE,
3 May 20, 4:30 AM.

FIELD ORDERS
No —

Map: 1:62500.

1. The Blue 1st Army holds the line HEIDLERSBURG—HANOVER. A cavalry engagement took place in the vicinity of LITTLESTOWN late yesterday afternoon. A regiment of Red cavalry was reported bivouacked at PINEY CREEK last night. One platoon thereof reached TANEYTOWN at 10:00 PM.
   Our advance base has been changed from FREDERICK to HAGERSTOWN.
2. This detachment will march today to EMMITSBURG, where orders will be issued for its further movements.
3. (a) *Left Column*:
   Capt L
   One-half wagon train
   1 sec Tr A, 1st Cav
   2 cos 1st Bn, 1st Inf

   (b) *Center Column*:
   Major C
   One-half wagon train
   1 sec Tr A, 1st Cav
   1st Bn, 1st Inf (less 2 cos)
   Rad sec 1st Inf

   (a) The left column will march at 5:00 AM via MOUNT ZION CHURCH, TOLLGATE, MILLERS BRIDGE, ROCKY RIDGE, WASHINGTON SCHOOL, MOUNT ST. MARYS.
   (b) The center column will march at 5:00 AM via KEYMAR, DETOUR, BM 447, MUMMA FORD, APPOLDS, MOTTERS, and the road east of ST. JOSEPH'S COLLEGE. Contact will be maintained with the left column.
   (c) The covering detachment will move to successive positions in readiness along the general line KEYESVILLE—TOMS CREEK CHURCH—HOFFMAN HILL.

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(c) *Covering Detachment*:
Col A

(1) Ind Cav:
Capt H
Tr A, 1st Cav (less 1 plat)
Tr B, 1st Cav
Mtd sec, 1st Engrs

(2) Advance Guard:
Capt R
Cos E and F, 1st Inf

(3) Main Body:
1st Inf (less dets)
Co A, 1st MG Bn
Btry A, 1st LA

(4) Rear Guard:
Capt S
Co M, 1st Inf

(1) The independent cavalry will reconnoiter at once toward CRABSTER, CLEARVIEW SCHOOL, BRIDGEPORT, HARNEY and the general line of advance of the covering detachment. It will interrupt the bridges over the MONOCACY RIVER north of PINEY CREEK. Observation will be maintained from the hill one mile northeast of SHARRETS until the covering detachment has crossed the MONOCACY RIVER.

(2) The head of the advance guard will cross BIG PIPE CREEK at BRUCEVILLE at 5:30 AM marching on HOFFMAN HILL by way of KEYSVILLE, TOMS CREEK CHURCH, 422 and 494, and preceding the main body by 600 yards. It will throw out a flank guard to the east to delay any hostile forces attempting to cross the MONOCACY RIVER.

(3) The main body will follow the route of the advance guard, except that Co A, 1st MG Bn (mtz), and Btry A, 1st LA (carried on motor trucks), will proceed at once to FRANKLIN SCHOOL, and there await further orders. An officer and two motorcycle couriers from each of these organizations will remain with the CO, Blue detachment.

(4) The rear guard will follow the infantry column of the main body at 400 yards.

4. All field trains will be placed in the center column.
5. Messages to head of infantry column of the main body.

By order of Col A:

Z,
Adj.

Copies to:
CO's of the Cav, MG Co, LA, Det Engrs and Tn.

NOTE:—The formation of the left and center columns is not prescribed in this order. Colonel A will give verbal directions at the conference, when the commanding officers assemble at 4:30 AM, which will require these columns to employ both advance and rear guards, and to carry out local reconnaissance as well as a reconnaissance of routes. Colonel A takes command of the main body himself. Instead of marching the motorized organizations with the infantry column, he places them within supporting distance on his left flank, as there are plenty of roads by which they can keep abreast of and close to the infantry column, moving by bounds from one point to another as the infantry column moves forward. He might have sent these organizations rapidly forward to a position blocking the Taneytown—Emmitsburg road, but as there are other roads by which the enemy may advance, he decides to keep his forces together and not to take up any positions until he receives reports from his cavalry.

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(D) MAP PROBLEM—A CONVOY

MAJOR PELHAM D. GLASSFORD,
Field Artillery

Maps: General Map, Vicinity of Leavenworth 1"=15 miles.
Fort Leavenworth and Vicinity, 1:21120. Leavenworth, Lansing, Boling and Easton Sheets.

General Situation:

War has recently been declared between the Blues, east and north of the Missouri River, and the Reds, west and south thereof.

On March 15, 1920, a Red army corps invading from Kansas City and Lexington in the direction of St. Joseph has been held for two days on the Platte River by the Blue 1st Army Corps. A Red division advancing on St. Joseph from Topeka is at Valley Falls, delayed by bad weather and by a Blue reinforced cavalry brigade.

Special Situation (Blue):

The Blue 1st Army Corps, short of supplies and with its communications seriously threatened, is attempting to hold its position on the west bank of the Platte River until the situation can be relieved by Blue forces being mobilized to the north and northeast of St. Joseph.

PART I

On March 15th, the 1st Battalion, 20th Infantry, Blue (less field trains), from the corps reserve, with Troops A and B, 15th Cavalry (less field trains), attached, was sent across the Missouri River at Leavenworth with the mission to collect forage and food supplies beyond Leavenworth and to bring them back in impressed transportation.

At 6:40 AM, March 16th, Major A, commanding this detachment, has his forces and collected supplies disposed as follows:

Company A and 70 loaded light motor trucks at Gospel Tabernacle (341.1—738.0).

Battalion headquarters and Company B, 7 light touring cars and 60 loaded wagons at Fallsom (338.8—736.9).

Company C and 60 loaded wagons at Five Points (south of Fallsom).

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Company D and 30 loaded wagons at Boling (east of Five Points.)

Troop A (less 1 platoon) at Fair Home Sta. (345.0—739.2), patrolling toward Leavenworth and Lansing and to the south.

One platoon, Troop A, at High Prairie S. H. (341.1—740.5), patrolling north.

Troop B (less 1 platoon) at Valley S. H. (336.7—737.8) patrolling west.

One platoon, Troop B, at Five Points patrolling south.

Major A's detachment has been continually harassed by organized bands of citizens, who are extremely hostile to the Blues. Practically all motor trucks and wagons have their owners impressed as drivers.

The weather is fair, visibility good, but due to recent heavy rains the roads are in bad condition. Roads shown on the 3-inch map in other than solid lines are not practicable for loaded trucks and wagons.

Major A had directed that troop and company commanders, or officers representing them, report to him at Fallsom at 7:00 AM.

Major A receives the following messages:

At 6:40 AM, dropped message from airplane:

AC of S, G4,
1st Army Corps,
WESTON,
16 Mch 20, 6:00 AM.

Maj A:

Vicinity of 339.0—737.0.

Enemy attacked our right early this morning, pushing us back to the line LEAVENWORTH—PLATTE CITY, but making no further effort to advance. Bridges at LEAVENWORTH and FORT LEAVENWORTH destroyed.

Bring convoy of supplies across ponton bridge at KICKAPOO without delay.

M,
Colonel.

At 6:48 AM, message by mounted courier:

Tr A, 15th Cav,
FAIR HOME STA.,
16 Mch 20, 6:30 AM.

Maj A:

Lt X with patrol of ten troopers reports he encountered small Red cavalry patrol near BRIGHTON (348.0—738.0) and drove it back toward LANSING about 5:55 AM. From hill 961, 1,000 yards northeast of BRIGHTON, he saw at 6:10 AM, Red cavalry, estimated one squadron, in camp at LANSING and watering horses. Small Red cavalry patrols seen moving toward LEAVENWORTH. He remains in observation at hill 961.

N,
Capt.

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At 6:52 AM, message by mounted courier:

Tr B, 15th Cav,
VALLEY S. H.,
16 Mch 20, 6:35 AM.

Maj A:

One of my patrols ran into troop of Red cavalry at breakfast in SPRINGDALE (330.5—738.5) about 6:25 AM. Trooper John Hawkins wounded and captured. Reds did not pursue. Am sending one platoon to keep Red troop under observation and to prevent it crossing the BIG STRANGER CREEK, which is reported very high and dangerous to ford.

P,
Capt.

Required:

(a) Major A's plan of action.

(b) Major A's orders issued by 7:30 AM.

Time allowed: Two and one-half hours.

PART I

An Approved Solution

(Map: Fort Leavenworth and Vicinity, 1:21120.)

(a) Major A decides to organize the impressed transportation into two distinct convoys, a motor convoy and a wagon convoy; to start the motor convoy toward Kickapoo at once, and to follow with the wagon convoy as soon as the wagons can be assembled.

To place all transportation in one convoy would delay the commencement of the march, make the convoy too long and unwieldy, cause congestion at Kickapoo and delay in crossing the ponton bridge. Trucks should not be placed in the same convoy with wagons when this can be avoided.

ROUTES

He decides to send both convoys north via the road along Y-line 336.7, then east via the road along X-line 756.5. He has the choice of one other reasonable route, the road via High Prairie S. H., F. Kreuger, Hund Station, M. E. Kennedy, and H. Mussett. Along the latter route, it is 16 miles to Kickapoo from crossroads 1000 near Fallsom, two miles shorter than the route he selects. The shorter route passes through numerous defiles, over numerous bridges that can be destroyed by hostile bands of inhabitants, and

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is closer to the more threatening force of the enemy. The route he selects is higher, and for this reason perhaps less muddy. It has the disadvantage of greater exposure to enemy observation, as the road follows along a high ridge most of the way. But this exposure will be of as much advantage to his covering cavalry patrols as to the enemy, who certainly will have full information of the convoys from the Red inhabitants, no matter what route they take.

Escorts

With the motor convoy he decides to send two platoons of Company A, and to give this escort four of the light touring cars he has seized, to be used for reconnaissance. Besides the men riding in these touring cars, there will be an average of about two men to each truck in addition to the driver. This number will be sufficient to guard the drivers and to insure protection against small bands of inhabitants. The motor convoy must depend largely upon its speed for its safety.

With the train of 150 wagons he decides to allot Company A (less two platoons) and one platoon of Troop B as police guard. This provides a little more than one man per wagon.

Company B can be started at once and is nearest to Kickapoo, so he decides to place this company at the head of the wagon train with orders to furnish the advance guard.

As the train will be at least one and one-half miles long, he decides to march Company C in the center of the wagon train. Company D, which is furthest from Kickapoo, will march in rear and furnish the rear guard.

He decides to employ Troop A to cover the right flank and rear, and Troop B (less one platoon) to cover the left flank and front of the wagon convoy. By keeping his infantry together, and with the wagon train, he will be able to keep off bands of hostile inhabitants by means of infantry flank patrols, and will be able to make adequate defensive dispositions against any threatened attack reported by the cavalry.

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Rate of March

He decides to push both convoys to the utmost speed consistent with arriving at Kickapoo with a fair proportion of the transportation.

Provisions for Reinforcements and the Defense of Kickapoo

He decides to give to the commanding officer of the motor convoy the mission of gaining assistance from the Blue forces at Kickapoo, and to defend a line south of Kickapoo until the wagon train has arrived at its destination.

(b) At 6:55 AM Major A directs his adjutant to send orders to all companies and troops to prepare at once to march with the collected supplies.

When the company and troop commanders, or their representatives, assemble at 7:00 AM, he issues a verbal order, which, placed in formal written form, would be as follows:

Blue Det,
Fallsom,
16 Mch 20, 7:15 AM.

Field Orders
No — }

Map: Fort Leavenworth and Vicinity, 1:21120.

(a) Motor Convoy:
Lt D
2 plats, Co A, 20th Inf
4 touring cars
70 motor trucks

(b) Wagon Convoy:
Maj A
(1) Police Guard
Capt H
Co A, 20th Inf (less 2 plats)
1 plat Tr B, 15th Cav

(2) Advance Guard:
Lt E
1 plat Co B, 20th Inf
1 touring car

(3) Main body, in order of march:
Co B, 20th Inf (less 1 plat)
Hq 1st Bn 20th Inf

1. The right of the 1st Blue Army Corps is holding the enemy on the line Leavenworth—Platte City. The bridges at Leavenworth and Fort Leavenworth are destroyed. Tr A is covering us from a Red cavalry force, estimated at one squadron, reported in Lansing at 6:10 AM. Tr B is holding off a troop of Red cavalry west of Big Stranger Creek, located in Springdale at 6:25 AM.
2. This detachment with the supplies it has gathered will march in two convoys to Weston, crossing the Missouri River by ponton bridge at Kickapoo. Both convoys will march on the following route: 1081—982—1079—1036—1107—Kearney—1081—Kickapoo across Missouri River.
3. (a) The motor convoy will clear 1081 by 7:40 AM. The 4 light touring cars will be employed for reconnaissance. The commanding officer will insure the defense

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One-half wagon train
Co C, 20th Inf
One-half wagon train
Co D, 20th Inf
(less 1 plat)
(4) Rear Guard:
Lt F
1 plat Co D, 20th Inf

(c) Right Flank Cavalry:
Capt N
Tr A, 15th Cav
1 touring car

(d) Left Flank Cavalry:
Capt P
Tr A, 15th Cav (less 1 plat)
1 touring car

of KICKAPOO from the south and southwest until the safe arrival of the wagon convoy.

(b) The wagon convoy will form at once on the FIVE POINT—1081 road with the head of the column at 1081. Capt H will have charge of the transportation. The wagon train will be organized into 5 companies of about 30 wagons each.

(b) 1. The police guard will superintend the formation of the wagon train, and assist in its organization. It will insure the orderly march of the convoy. Broken wagons will be shoved off the road and their loads transferred to other wagons without halting the train.

(b) 2. The advance guard will precede the main body by 500 yards.

(b) 3. The head of the main body will leave 1081 at 8:00 AM. Patrols will be sent well out on both flanks by all companies in the main body.

(b) 4. The rear guard will follow the main body at 500 yards.

(c) The right flank cavalry will cover the right flank, and the rear of the wagon convoy, maintaining contact with the rear guard thereof.

(d) The left flank cavalry will cover the left flank and the front of the wagon convoy, maintaining contact with the advance guard thereof.

4. Messages to head of wagon train.

A,
Maj.

Distribution:

To troop and company commanders, to commanding officer of the motor convoy escort, and to the officer in charge of wagon transportation.

PART II

Special Situation (Blue):

The motor truck convoy with its escort of two platoons Company A, 20th Infantry, travelling via the ridge road along Y-line 336.7, reached the east bank of the Missouri River at Kickapoo about noon. In accordance with his instructions the commanding officer of the motor convoy escort sent a message to Major A with the information that his two platoons were defending Kickapoo from the south along Plum Creek, from Crook Point to the river.

The wagon convoy, taking the route winding between Y-line 341 and 343, has been seriously delayed by bands of inhabitants destroying bridges over Salt Creek and its

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tributaries. At 3:00 PM, the head of the wagon train is at road junction 1048 (341.1—751.9), and the tail of the wagon train at Hund Station. Major A's troops are distributed as follows:

Company B at head of wagon train with one platoon as advance guard.
Company A (less two platoons) and one platoon, Troop B, police guard, distributed along the wagon train.
Company C at center of wagon train.
Company D following wagon train, with one platoon as rear guard.

Major A and his headquarters are at the head of Company D, and at 3:00 PM, are at Hund Station. With Major A are the commanding officer of Company D and the officer in command of the police guard.

Troop B (less one platoon) is protecting the left flank of the convoy and according to last message received (2:15 PM), has successfully prevented two troops of Red cavalry from crossing Big Stranger Creek. Exact location of Troop B at 3:00 PM not known.

At 3:00 PM, Troop A is heavily engaged on Sentinel Hill and losing ground. Led horses are trotting toward Hund Station. A mounted patrol, about six troopers of Troop A, is seen to dismount on hill 926 and open fire apparently in the direction of Taylor S. H., sending the led horses to the southwest behind the hill. Major A can also see a Blue mounted patrol on Hund Hill.

A runner informs Major A that the rear guard is engaged with about 60 Red cavalrymen in the vicinity of 100.

Required:

The orders given by Major A at Hund Station.

Time allowed: One and one-half hours.

PART II

An Approved Solution

MAJOR A'S ORDERS AT HUND STATION

To his intelligence officer:

"Find out what the situation is to the east and northeast of hill 926 and report to me at 1036 on the Millwood Road."

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To officer in command of police guard:

"Push the train along as rapidly as possible and keep it closed up."

To his adjutant:

"Take my orderly, ride forward along the convoy, and inform the commanding officers of Companies B and C that we are seriously attacked from the east, especially from Sentinel Hill, where Troop A is engaged and gradually falling back to the west. Direct the commanding officer, Company C, to proceed with three platoons across country to the north and await orders at the railroad south of hill 1047. Direct the commanding officer, Company B, to proceed with his company (less advance guard) to a position in readiness in the vicinity of 1036 on the Millwood Road, sending out patrols to the east and northeast, and gaining contact with the troops defending Kickapoo. I shall go to 1036 as soon as the wagon train has cleared Brown."

To commanding officer, Company D:

"Company D will protect the rear of the convoy, and will support the withdrawal of Troop A from this vicinity. The platoon in the rear guard reverts to your command. As soon as the wagon train clears Brown I shall go to 1036 on the Millwood Road."

Written message to commanding officer, Troop A, by two troopers taken from the police guard:

Blue Det,
HUND STA.,
16 Mch 20, 3:10 PM.

Capt N:

Rear guard engaged with about 60 enemy cavalry southwest of HUND HILL. Co D covering your withdrawal from vicinity of HUND STA., Cos B and C from vicinity of 1036 on MILLWOOD ROAD. Two platoons of Co A holding PLUM CREEK from CROOK POINT east. Messages to 1036.

A,
Maj.

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(E-1) A POSITION IN READINESS

Preparatory to Occupying a Defensive Position

(A general discussion followed by problem on Gettysburg Topographical Map, 1:21120)

COLONEL L. R. HOLBROOK,
Field Artillery

GENERAL SCOPE OF DISCUSSION

The action of small units with reference to a position in readiness quite generally pertains to advance, flank, and rear guards, and detachments charged with more or less distant missions, such as covering a larger force in motion or, perhaps, protecting stores against raiding parties of the enemy.

In these instances, the covering forces do not generally have to take artillery fire into account and then are not far advanced from the points or forces covered.

In the general discussion that follows, a force the size of a division was kept in mind, but many of the remarks apply equally well to smaller units.

After a brief study of the general subject, a division problem will be discussed in detail, and a position in readiness taken up with a view to a probable defensive action. This will be followed by the discussion of a problem in which a position in readiness is taken up with a view to offensive action.

DEFINITION

In general, a "position in readiness" is, first, one taken up by a command with a view to resisting the advance of an enemy in the immediate vicinity, but with knowledge of the enemy's movements as yet insufficient to decide fully a detailed plan of action; second, one in which sufficient development (as in march disposition) is made to insure ready deployment for offensive action at the proper time.

It may easily happen that the mission assigned the troops in question is so definite that a defensive action or an offensive action will certainly follow; or, the character of the action may well depend on future orders, or may develop from information or future action of the enemy,

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terminating in either offensive or defensive action, or, possibly, in a march to meet new and unexpected changes.

The decision as to what shall be done immediately by the commander of a force is determined by the *mission* and the *emergency*. Just how this decision will be carried out in detail will depend upon the strength of the command, the assistance expected from supporting troops, the plans of the next higher commander, the latest information of the enemy, and his possible and probable lines of action.

Keeping in mind these limiting factors, a map study of possible positions, together with a brief calculation of times and distances, will determine the movements to be made and the necessary cavalry, air and special officer reconnaissance.

Characteristics of a Position in Readiness

Cover for all elements of the command, and absence of trenches exposed to the enemy's view, are desirable elements in defense. The character of the cover required—whether ridges, or towns and forests—will be determined by the enemy's means of terrestrial and aerial reconnaissance.

Axial and lateral road communications, covered from terrestrial view, if possible, are recognized essentials in a defensive position, while observation posts, secured to ourselves and denied to the enemy, are golden assets. It may be accepted as a maxim that ground features affording cover for troop communication in rear, and for observation in front are "key points" to a position, and together with the artillery positions constitute the framework of the defense.

If the position in readiness is not taken up with a view to defensive action, a defensive position need not necessarily be selected, but questions of concealment, roads, communications and observation are ever present.

Preparation for Defense and Incidents of Occupation

It is patent that thorough consideration should be given to selecting a defensive position from the map for possible future occupation. Once a position in readiness is selected

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with a view to defensive action, thorough reconnaissance by all commanders must be made, and all plans completed for its occupancy under the several hypotheses for attack.

Just what defensive works, trenches, etc., should be constructed lies within the judgment of the immediate commander. If certain portions of the line must be occupied in case of attack, they would most certainly be strengthened; but extensive works might lead to an unfortunate decision to hold ground not well adapted to check the assault as finally developed by the action. Troops will reluctantly leave the cover of trenches, constructed by their own hard labor, for exposed positions in the open.

Furthermore, in order that the action may be *flexible, aggressive* and *mobile,* and that the enemy may come up against many elements of surprise, no obstacle should exist that will limit the defenders' freedom of action; nor should trenches or activities of any kind reveal the main line of defense, so long as its location can be hidden from the enemy. Troops held in readiness may be as close as desired to the line they expect to occupy, providing they have necessary cover, but if they actually take up a position in defense, they are already (in their minds) committed to action, and any change of disposition not only becomes difficult, but impairs confidence in higher commanders.

Therefore, *prepare by plans and reconnaissance* the last detail of defense, intrench only in so far as you can foresee probable necessity of occupation—in holding certain sections to meet possible attacks—but retain the fighting troops well concentrated and in hand for possible contingencies until the enemy has shown his hand and committed his troops to action beyond recall.

Character of the Defense

In no way does the situation here resemble *stabilization.*

In the stabilized situation each side has a more or less intimate knowledge of the organization and disposition of his opponent. The lines are so close together that a drive at any point is almost sure to go through for a certain distance. In the case under consideration, the movement of an attacking force should be known sufficiently in advance to

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permit a demoralizing fire upon heads of columns or troops formed up for assault. Large reserves are centrally held by the defense and a timely reinforcement of any threatened point should result in checking the attack.

Active cavalry, in early contact; outposts in the later stages of the enemy's approach; concealment of defending troops and camouflage of the elements of the position create uncertainty for the enemy, counter-balanced only by great preponderance of force. Lack of unlimited quantities of ammunition for use in the attack, and relative ignorance of the position are conditions that render unnecessary echelonment in depth to prevent large casualties, or to resist deep penetration. Rather would a strong firing line be provided in an advanced position and the enemy be forced to deploy at a distance by well adjusted long range artillery fire. It is estimated that any knowledge of such an advanced position gained by the enemy would be more than counterbalanced by the advantage of long range fire on his advancing columns, and continuance of such fire up to latter stages of the assault.

We therefore feel justified in establishing a *shallow zone of defense,* consisting only of a *combat echelon* and *necessary reserves,* and light outposts or covering detachments, according to circumstances.

THE ORDERS

More than likely the orders for taking up the position in readiness will be issued while troops are in march and approaching the position. Moving from camp or billets to a distance, a regular march order would probably be issued and the order for taking up the position in readiness follow a necessary reconnaissance, and would be distributed at a suitable distance from the position to avoid undue marching. If the position is but a relatively short distance away, the order may direct the movement of the separate units independently, each providing for its own security, and make such assignments of roads as to expedite the movement, save time, and avoid confusion.

Aerial reconnaissance would certainly be counted upon to secure latest and most accurate information, if planes are available.

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In general, the *cavalry* would be pushed well out toward the enemy and given a definite mission to "develop his position, strength and intentions;" "to fall back before the enemy, delaying his advance and uncovering the defensive position by withdrawing to a flank (or designated position in rear)"—or to carry out other designated missions.

The infantry designated for actual occupation of lines of defense would be assigned covered positions in their immediate vicinity; and orders for certain entrenching, etc., might be given. Designated reserves should be suitably placed, for quick reinforcements, if possible, near cross-roads radiating to the front and flanks.

The artillery would be directed to take up a "position in readiness" or "in observation" within suitable designated areas for placing fire upon all approaches to, and for cover of the position. It should prepare all desirable firing data. Actual "occupation of position" and adjustment might under certain circumstances be permitted when similar action by the infantry would, for psychological reasons and on account of loss of mobility, be out of the question.

The *trench mortar battery* would similarly be placed near the position designated for installment of its pieces.

Engineers would be assigned suitable missions, and, upon the completion of the same, would generally take station near the reserves, as ordered.

Dressing stations are not established.

Sanitary trains are generally given station well to the rear—there to await orders.

Combat trains accompany their commands or become subject to their orders.

Field trains either accompany their commands or remain well to the rear according to the probability of early combat.

Engineer trains are posted according to the work assigned.

Division supply trains and *ammunition trains* function from points already established, or designated in orders. Distributing stations may be assigned for ammunition and trains sent to the rear to refill.

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The division command posts and brigade command posts would be announced.

NOTE:—The axis of signal communications would be tentatively selected and all arrangements made for quick installation should it be desired. All command posts for smaller units would be selected, but occupied only in case of actual disposition for combat.

A CONCRETE CASE

We will now apply the above principles to a concrete case, making an "estimate of the situation" based upon given data, issuing the necessary orders and analyzing the same.

Map Problem—A Position in Readiness

Map: Gettysburg-Antietam General Map, Gettysburg-Antietam Map, 1:21120, Emmitsburg, Knoxlyn, Gettysburg Sheets.

General Situation:

The Potomac River divides Blue, northern, and Red, southern, forces.

The Blues are organizing an army corps in Gettysburg and vicinity with corps headquarters and supply depots at Gettysburg. Headquarters of 1st, 2d, 3d, and 4th Divisions at Knoxlyn, Arendtsville, Gettysburg and Hunterstown respectively. Other corps are forming in the vicinity of Chambersburg (west) and York (east).

Red mobilization has proceeded with greater rapidity than the Blue, and Red forces of all arms are invading the Blue territory to interrupt communication, destroy supplies, attack and break up the Blue forces wherever found.

Special Situation (Blue):

A Red division crossed the Potomac at Harper's Ferry on August 3d. Red cavalry has been reported at Frederick with patrols approaching Libertytown, Woodsboro and Catoctin. An independent Red cavalry brigade is reported crossing on pontons east of Leesburg. Information has been received that other Red forces will not be ready to cross the Potomac for several days.

At 6:00 PM, August 3d, you are in command of the 1st Division (1st Squadron, 4th Cavalry, and 104th Trench Mortar Battery attached) and directed to prevent any move-

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ment of the Reds northward between South Mountain and Marsh Creek—Monocacy River, specially guarding the Hagerstown Road against molestation by the enemy.

You are further directed to get in communication with General B, commanding the 3d Division, in the adjacent sector to the east, and co-operate with him.

The safety of roads through the mountains, from Hagerstown Road (through Fairfield and Fountain Dale) west and south to include the Frederick Turnpike (southwest of Emmitsburg), is secured by independent cavalry.

Required:

First. Estimate of the situation.

Second. Orders of General A.

NOTE:—The 4th Infantry, 2d Battalion, 1st Light Artillery, 3d Battalion, 3d Heavy Artillery, and 1st Engineers and engineer train are retained at the base to complete their equipment in minor details and perform certain labor, they are subject to the division commander's orders in emergency and should be able to join in a day or two. The organization of the 3d Division is no further advanced. The 2d and 4th Division are short many men and much equipment.

ESTIMATE OF THE SITUATION

General A realizes that the surest way to prevent annoyance on the part of the enemy in the vicinity of Gettysburg is to defeat him at a distance. Reports as to the enemy's strength and disposition may be far from correct and it is possible he could, by an aggressive stroke, co-operating with General B, rid the Blue country of the Red menace.

But General A is not free to act in such an aggressive manner, at this time, on his own initiative. His mission specifically requires checking the advance of the Reds northward between the Marsh Creek—Monocacy River line and South Mountain and preventing molestation of the Hagerstown Road.

This can be done at present only by making such a disposition of his forces as will assure blocking the Red advance while its artillery is beyond reach of the Hagerstown Road. This could not be done by going much beyond the support of General B's force as this would disastrously expose his left flank, and General B is to cover Gettysburg in the sector to the east.

The intelligence service will rapidly develop the true Red situation; and General A, pushing his cavalry out to

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get and maintain contact with the enemy, will plan first to block the advance of the Red force, but not irretrievably commit himself to defensive action alone. He must be prepared for a defensive-offensive play should opportunity present itself; and he must be ready to strike the Reds locally in offensive action in conjunction with General B in case of a favorable opening.

The Decision of General A

The dominating factor in General A's plan is the intention of his corps commander as shown in the instructions issued to him. This, coupled with his knowledge of the formative condition of the corps, at once dictates his plan—*to take up a position in readiness, which will assure successful carrying out of his mission and offer opportunities for possible future aggressive action.*

General A realizes that every day adds to the strength of the Blues as an organized fighting force—and every day may reduce the sustaining power of action of the Reds as they increase their distance from their base by penetrating into the Blue territory.

General A's First Step

Map reconnaissance by himself and staff should precede movement and orders for his command. This will at once develop the best probable general position for checking an enemy's advance and determine the selection of the position in readiness. Measurement of distances from the Hagerstown Road to the several possible positions will determine their suitability for occupation, should they fulfill the general requirements for defense.

Such a reconnaissance at once develops a number of possible defensive positions south of the Hagerstown Road, which could be occupied for checking the advance of a hostile force; but the requirement that the Hagerstown Road shall be secured against molestation by the enemy requires a position at such a distance as to prevent Red artillery fire from effectively harassing the road—better, to prevent the artillery reaching it at all.

From the information given, we may assume that approaching Red columns are provided with heavy and light

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guns (divisional artillery), but probably with nothing heavier than the 6-inch howitzer as heavier guns would impede their progress and be unsuited to their mission. Therefore, we should select for occupation such a position as will deny to the enemy the facilities for firing on the Hagerstown Road with a 6-inch howitzer.

We shall therefore take as a requirement that the enemy shall not be permitted under any circumstances to install his guns closer than about 12,000 yards from the Hagerstown Road and we should, so far as possible, prevent him from occupying observation posts favoring his adjustment and control of fire.

Efficient air service, if indeed any at all, at this stage of mobilization is only problematical, and the question of terrestrial observation is of prime importance to both sides in any situation that may arise.

Other things being equal, the shortest line practicable should be selected for defense, and the area in the big bend in the Monocacy west of Harney avoided.

A position further to the south would require longer lines of supply without compensating advantages and, perhaps, too loose contact with General B. The 3d Division, operating in the sector to the east, is not of sufficient strength to maneuver far from its base, and co-operation between the two forces is necessary to prevent defeat of either.

These considerations induce General A, as his first step, to seek a position suitable for defense somewhere in the vicinity of the line Fairplay—Emmitsburg. Positions farther to the north, while attractive, if opposing a Red force without artillery, cannot be seriously considered by General A as an immediate line of resistance in case of attack; but they are of interest in the preservation of his force, should he, in future operations, be forced to withdraw from the position first selected.

The Possible Positions Open to General A's Selection

First: General A considers as a first possible position one with a line of resistance extending generally from hill 568 (2,000 yards north of Fairplay) through hill 523—

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road junction 542—road junction 552—hill 563—hill 564, with outposts along the general line 562 (road junction south of Fairplay)—hill 543—hill 544, west through hill 523—hill 524—hill 546.

This position, although long, can be held lightly where Marsh Creek and Flat Run break through the general line of defense, and farther to the west. It offers excellent fields of fire, good communication to the rear, support to the outposts in falling back and general concealment of the real line of defense to assaulting troops before coming within range, and fulfills a condition of echelonment in depth. But it lacks good distant observation in front of the left flank, except so long as hills 728 and 604 could be used while the enemy is at a distance; they would be occupied by the enemy in the early part of an attack, giving him an extended view over all the rear area. Our only extended observation could be secured through manning posts on Round Top, Carrick Knob and hill 1263.

Second: The general line of resistance could be taken up along 562—543—544—523—524, west (the outpost line indicated above) with outpost line from hill 728 through hill 604—hill 591—hill 589 and ridge south of the Emmitsburg Road, and across to South Mountain near Frederick Pike.

This position offers all the advantages of the one first considered and, in addition, preserves to ourselves *for the present* the advantage of distant observation, denies the same to the enemy and affords a line of resistance concealed in greater part from the view of the enemy until he may have driven in the outpost. Then he would get possession of the only observation posts immediately available to us, unless we found it practicable to man Round Top, Carrick Knob or hill 1263, which at this stage of mobilization with customary shortages of supply is always somewhat problematical. But even should we gain this observation, we do not permanently deny to the enemy that which he most ardently desires and must have for a successful operation. Points in South Mountain are denied to him by the independent cavalry.

Besides, this advanced position reserves to us additional crossings of Marsh Creek, should we desire to co-

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operate with General B, keeps open the Emmitsburg Road to Gettysburg, and assures excellent covered lateral communications immediately behind the line of defense.

Third: There still remains a third position open to us—that of the line 728—604—589—Emmitsburg, and ridge 523—546—with such light outposts as might be thrown out to commanding points in advance—the ridge in front of hills 728, 604, and hills 464, 421, 443, St. Josephs College.

This line assures to us the advantages of the observation posts heretofore discusssed and denies to the enemy observation within our lines, affords free fields of fire, covered approaches and communication direct to the rear with excellent positions to fall back upon, and additional communications across Marsh Creek for closer co-operation with General B.

This position does not present to the enemy a well defined line of resistance. The lines occupied could neither be completely developed by an air reconnaissance on account of covering woods, nor divined by map inspection. It is distinctly a position, which, if attacked, will not be subjected to an overwhelming concentrated fire of well adjusted artillery. An unlimited supply of artillery ammunition cannot accompany a force moving rapidly to a distance, for such quick action as is indicated in the present situation, and lack of terrestrial observation of the ground beyond would place an attacking force here in a most decidedly unfavorable situation.

THE POSITION CHOSEN

On account of this (third) position being suited to defense by all arms, assuring complete control of all terrestrial observation of distinct advantage to the enemy, affording free fields of fire to the front and unusual means of flanking defense, together with excellent road communications, General A selects it to be occupied in emergency. He is now ready to prepare the march order for the movement of the troops accompanying him and the elements left behind. Detailed reconnaissance can now be ordered, and the order for taking up a position in readiness will be issued to the troops en route.

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General A now sends an officer, thoroughly conversant with his orders and plans, to report to General B and to remain with him as information officer. He, himself, gets in personal communication with General B, visiting him if practicable, unfolds his plan and prepares for mutual co-operation before issuing his order for taking up a position in readiness.

It will be assumed that General A now ascertains that General B has selected a tentative position from about 2,000 yards south of Germantown to hill 728, and that they have made tentative plans for mutual artillery support and for quick passage of Marsh Creek in case of necessity.

(Read pars. 557-8, 560-2, 564-76, *Infantry Drill Regulations, American Expeditionary Forces*, Part II.)

After giving the foregoing consideration to his future action, General A at 8:00 PM, August 3d, issued an order for his command to march out at 6:00 AM, August 4th. (Order omitted for this discussion.)

General A, with certain staff officers, preceded his command on August 4th, in order to reconnoiter the terrain.

Assuming that the march proceeded without incident, and that no further orders or material information reached General A, he issued the following order:

1st Div,
MIEDLY FARM,
4 Aug 19, 10:00 AM.

SECRET

FIELD ORDERS }
No 2 }

Map: Gettysburg-Antietam General Map, Gettysburg-Antietam Map, 1:21120, Emmitsburg, Knoxlyn, Gettysburg Sheets.

1. A Red division crossed the POTOMAC at HARPER'S FERRY yesterday. Red cavalry has been reported at FREDERICK with patrols at LIBERTYTOWN, WOODSBORO and CATOCTIN. An independent Red cavalry brigade is reported crossing on pontons east of LEESBURG.
   Our 3d Div will operate east of the MARSH CREEK—MONOCACY RIVER line and co-operate with us. Our right flank is covered by independent cavalry securing the safety of all roads through SOUTH MOUNTAIN as far south as the FREDERICK TURNPIKE.
2. This division will take up a position in readiness north and east of EMMITSBURG with view to defending the line, hills 728—604—589—EMMITSBURG—523—546. Conditions of march cease.
3. (a) The 99th Obsn Sq will report the disposition and movements of the Red forces in our front north of the POTOMAC.

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(b) The 1st Sq 4th Cav will continue its reconnaissance toward WOODSBORO, LIBERTYTOWN and CATOCTIN and will delay the advance of the Red cavalry.

(c) The 1st Brig will bivouac under cover of woods with 1 regiment between hill 728 and FAIRPLAY and the other with MG Bn north of hills 591—589, south of the EMMITSBURG ROAD.

It will prepare light intrenchments (concealed by the woods) covering the defensive position from MARSH CREEK to hill 567 (inclusive).

(d) The 2d Brig (less 4th Inf) will bivouac under cover of woods in the valley just north of the ridge 523 west toward 544; and cover, by light concealed intrenchments, the defensive position from hill 567 (exclusive) to hill 544 (inclusive). The 4th Inf upon arrival will camp along MIDDLE CREEK about 1½ miles northeast of RHODES MILL and will constitute the division infantry reserve.

(e) The 1st MG Bn will bivouac with the division infantry reserve (see [d]).

(f) The 1st FA Brig will go into bivouac as shown below, preparing emplacements in vicinity of bivouacs, and determining data for firing on close and distant objectives.

Light Artillery, 1 bn east of MARSH CREEK in vicinity of road 434—BALLINGER, about 1,000 yards south of GREENMOUNT, covering the front 728—604—EMMITSBURG and enfilading the ridge 486—487—484, SE of hill 728.

1 bn in the vicinity of ridge road junction 562, hill 543, south of FAIRPLAY, covering the front 728—604—591—EMMITSBURG.

1 bn in the vicinity of road, hill 522—road junction 524 (west of RHODES MILL) covering the front of 604—EMMITSBURG—544. Additional emplacements will be constructed for a reinforcing battalion with the same missions and in the same vicinity.

Heavy Artillery, 1 bn in the vicinity of the road 520—547 (north of FAIRPLAY) and another near the road 507—434—533 (between GREENMOUNT and BALLINGER).

The trench mortars near hill 524 (N of 604) with view to delivering fire between hills 728 and 604, both inclusive, and alternate emplacements for covering line 591—589, both inclusive.

(g) The 1st Engrs will remain based on KNOXLYN for the present, but immediate reconnaissance will be made of all bridges on MARSH CREEK—MONOCACY RIVER between FAIRPLAY and BRIDGEPORT with view to possible destruction; 4 light bridges for foot troops and wagons will be thrown across MARSH CREEK under cover of trees between line of hills 728—586 and road crossing near 439; and passages will be opened for infantry through the woods to the east and north of hill 589 under instruction of the CG 1st Brig. Two officers will be sent to each infantry brigade commander to assist in preparing and carrying out plans of defensive works.

(h) The 1st F Sig Bn (less dets) will bivouac under cover of woods in the vicinity of MIEDLEY. It will insure telephone communication between the division, brigade command posts and separate units, making use of commercial lines so far as practicable.

(x) Outpost orders will issue later.

4. (a) San Tn will be assembled in the vicinity of DIEHL'S MILL.

(b) F Tns will join their units.

(c) Am Tn will park at CLEAR SPRING FARM and Sup Tn near DIEHL'S MILL. The Engr Tn and San Tn remain at KNOXLYN until further orders.

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5. Command posts.
Div and 1st FA Brig: MIEDLEY FARM HOUSE.
1st Brig: FAIRPLAY.
2d Brig: road junction 552.

A,
Maj Gen.

Copies to:
CG
Div Staff
1st Sq 4th Cav
1st Brig
2d Brig
1st FA Brig
1st MG Bn
1st Engrs
99th Obsn Sq
1st F Sig Bn
CO Tns
1st Corps
3d Div

REMARKS ON FIELD ORDERS NO. 2

Par. 1. It would have been sufficient to say "no change in the situation" if the information here given had appeared in the march order. The fact that cavalry was attached was not announced as it had probably been working with the division.

Par. 3. (c) (d) The 1st and 2d Brigades were given orders to go into bivouac *first*, in order that too much importance would not be attached to defensive action at this time.

3. (f) The orders for the 1st Field Artillery Brigade might well have left more discretion to the brigade commander. Here it was felt that his camping places should be announced and to add his mission required but little more thought.

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(E-2) A POSITION IN READINESS

CAPTAIN WALTER C. SHORT,
Infantry

Maps: Pennsylvania-Maryland Geological Survey, 1:62500, Fairfield, Emmitsburg, Taneytown Quadrangles, and Gettysburg-Antietam, 1:21120, Fairfield, Knoxlyn, Emmitsburg, Sabillasville Sheets.

General Situation:

War has been declared between Pennsylvania (Blue) and Maryland (Red).

The 2d Blue Corps is mobilizing at York and the 1st Blue Corps in the vicinity of Gettysburg. The 1st Blue Division, which is a part of the 1st Blue Corps, is mobilizing at Orrtanna. The Blue mobilization will not be completed for three days. The 1st Division, however, has completed the mobilization of one infantry brigade and of the artillery brigade.

A Red corps is being mobilized at Frederick. One division of this corps is known to be mobilizing at Woodsboro. The time required to complete the Red mobilization is approximately the same as that of the Blues.

The people of both states are calling for an immediate invasion of the opposing state. An attempted offensive by both states appears probable.

Special Situation (Blue):

At 6:00 PM, October 1st, General A, commanding the 1st Infantry Brigade, received orders to proceed with his brigade, reinforced by the 1st Light Artillery, 1st Ambulance Company, and Troop A, 1st Cavalry, to Emmitsburg, to prevent the advance of the enemy to the north and to cover the mobilization of the corps.

General A began his march at 5:30 AM, October 2d, marching via the Orrtanna—Fairfield—616—577—Toll Gate—Liberty Mills—Emmitsburg road. His order of march was as follows:

Independent cavalry, Troop A, 1st Cavalry; advance guard, 1st Battalion, Machine Gun Company, one 1-pounder and two Stokes mortars, 1st Infantry and Battery A, 1st Light Artillery, less combat train; main body in order of march, 1st Infantry (less 1st Battalion and machine gun

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company), 2d Machine Gun Battalion, 1st Light Artillery (less Battery A and combat train), 2d Infantry, 1st Ambulance Company; combat train, 1st Light Artillery. Trains to follow at 1 mile.

At 7:45 AM General A, riding at the head of the support of the advance guard at the southern edge of Fairfield, received the following message:

Tr A, 1st Cav,
Hill 789 (N of ZORA),
2 Oct 19, 7:25 AM.

CG,
1st Brig.

The advance guard of an enemy force of infantry, machine guns, and artillery has just turned north, 500 yards west of EMMITSBURG on the 483—475—483—493 road. A member of a patrol on CARRICKS KNOB has just reported that the column extends to the south on the WOODSBORO ROAD as far as APPOLDS. He states that no trains are visible yet. I have sent an officer's patrol to determine the strength of the column.

A,
Capt.

Required:

(a) General A's estimate of the situation.
(b) Orders actually issued by General A.

NOTE:—A proper proportion of signal troops has been assigned to each regiment of infantry and to brigade headquarters.

GENERAL A'S MISSION

General A's mission is an offensive one until Emmitsburg has been captured and thereafter becomes defensive in general character, that is, he must prevent the enemy from advancing to the north and he must cover the mobilization of the corps. A passive defense on his part will not enable him to carry out any part of his mission under the present situation. Should the enemy prove greatly superior General A may not be able to carry out the first part of his mission, i. e., capture Emmitsburg, but he must under any conditions act aggressively enough to prevent the enemy from advancing on Getysburg and menacing the corps before it has completed its mobilization.

THE ENEMY

It is yet too soon for General A to be sure of the size of the enemy's force. He knows that the enemy has been mobilizing a division at Woodsboro, but his information in-

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dicates that the mobilization will not be completed for two or three days. The column reported by the cavalry extends for about 6 miles. A reinforced brigade would be about this length. The fact that no trains have yet been seen does not necessarily mean that the rear of the column has not yet come into view. The trains might be following at some distance, or might even be left behind at Woodsboro temporarily, although the latter assumption is not probable unless the Reds have received word of General A's advance. In view of the state of the mobilization of the Reds and the fact that the column is marching on a single road, General A does not believe that the force can be a complete division and considers it probable that it is little, if any, superior to his. Since the enemy has no cavalry, Troop A should be able to furnish General A quite exact information in the next hour or two.

The hostile forces are strung out on a single road to a distance of 6 miles. The enemy could not hope to bring his full force into action in less than two hours, and in all probability it would require three hours for the force to deploy.

The movements of the enemy might indicate either an invasion of Blue territory or simply the pushing forward of troops to protect the frontier. The fact that this force did not take the Gettysburg Road at Emmitsburg is no indication that its mission is not an offensive one, since it might be a force thrown forward to protect the flank of the Red corps during its advance. The Red political situation makes such an advance seem probable. The fact that the enemy did not stop at Emmitsburg does not mean that his mission is not to protect Emmitsburg, since in all probability the first troops would continue farther to the north even if assigned such a mission. The main body of the enemy may yet take the Gettysburg Road. If the enemy has discovered the presence of General A, he would in all probability have his advance guard continue to the north as far as 475 or 493 before turning to the east and thus become a flank guard for the protection of the main body against General A's force. If the enemy has not yet discovered the presence of General A's force, he may later turn to the east after making such a discovery. General A can arrive at no defi-

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nite idea of the intentions of the enemy, but considers it probable that it is a small invading force sent forward before the mobilization is complete, in order to meet the demands of the people.

General A believes that the enemy was unaware of General A's advance, otherwise he would be marching in two columns to facilitate his deployment since there is a road paralleling his column at a distance, in most places, of less than one mile.

His Own Forces

General A considers that his force is in all probability about equal to that of the enemy. The length of the enemy's column indicates a reinforced brigade, and it is improbable that a brigade would be provided with more than a regiment of light artillery and a battalion of machine guns. The enemy has no cavalry and this will prove to be a very great advantage to General A, since he should have much more exact information than the enemy.

General A's troops are in practically the same condition as those of the enemy, that is, they are strung out on a single road for a distance of 5 miles, with the tail of the column not yet out of Orrtanna. His command is disposed on the road as follows:

Advance Party: 1 company, 1st Battalion, 1st Infantry	125 yards.
Distance	300 yards.
Support: 1 company, 1st Battalion, 1st Infantry	300 yards.
Distance	400 yards.
Reserve: 1st Battalion, 1st Infantry (less 2 companies).	
Machine gun company, 1st Infantry.	
1 section, one-pounders.	
1 section Stokes mortars.	
Battery A, 1st Light Artillery (less combat train)	1200 yards.
Distance	800 yards.
Main Body: Brigade heaquarters and attached signalmen	100 yards.
1st Infantry (less 1st Battalion, machine gun company, 1 section, one-pounders, 1 section Stokes mortars and field train)	1890 yards.
2d Machine Gun Battalion (less field train)	1760 yards.
1st Light Artillery (less Battery A, combat train and field train	1690 yards.
2d Infantry (less field train)	2965 yards.
1st Ambulance Company	260 yards.
Combat train, 1st Light Artillery	1665 yards.
Field train	2765 yards.

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His column is located as follows: The point has turned south at 616; the advance party is approaching 616; the head of the support is at the southern edge of Fairfield; the head of the reserve is near the center of Fairfield; the head of the main body is 300 yards north of 611; the head of the artillery is about 200 yards south of 665; the head of the 2d Infantry is 200 yards north of 679; the 1st Ambulance Company, combat train, 1st Light Artillery, and the field trains have not yet left Orrtanna. General A has the advantage, however, of early information of the enemy and may be able to close up his column somewhat before the enemy begins his deployment. General A is situated on the flank of the enemy's line of march. The ground to the east is suitable to cover his deployment for attack and also offers excellent defensive positions.

General A can expect no support. The other infantry brigade of his division is not yet mobilized. Artillery might be made available, but it is improbable that it would reach him in time to be of assistance if ordered by the division.

The morale of both sides is excellent since there has, as yet, been no engagement. General A, however, will have the advantage of making his preparations under cover, while the enemy's movements can be fully observed by General A. This will be an even greater advantage with raw troops than with veterans since initial success would probably have a greater influence on the outcome.

Plans of Action

Several plans of action are open to General A.

1. He may take up a defensive position south of Sugar Loaf Hill—Wilson Hill—Carr Hill.
2. He may take up a defensive position in the vicinity of hills 724 and 742, southeast of Fairfield.
3. He may attack at once to the southeast of hill 742, throwing his advance guard against the leading troops of the enemy without waiting for his main body to come up.
4. He may take up a position in readiness in the vicinity of hills 722 and 789 with a view to deploying under cover of these hills and attacking.
5. He may take up a position in readiness in the vicinity of hills 724 and 742 with a view to deploying under cover of these hills and attacking.

Plans 1 and 2 are not feasible for they will not permit General A to carry out any part of his mission. In either

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case the enemy could turn to the east and, avoiding an engagement with General A, march on Gettysburg. It would hardly be possible for General A to change his dispositions in time to cut off the enemy should the latter not wish to accept combat.

Plan 3 offers very little chance of success. Attacking in this manner General A would not be able to make any concerted attack using all of his force. As soon as the advance guard had passed to the southeast of hill 742, it would become apparent to the enemy that he had only a battalion to deal with. The enemy would be able, to some extent, to select the ground for receiving this local attack, and would thus have everything in his favor. It is too soon, anyway, for General A to decide definitely on attacking, or the direction of his attack. Additional information may develop the fact that the enemy is so greatly superior as to render an attack suicidal. The enemy may so change his direction of march that if General A made definite plans for an attack at this time, they would wholly miscarry and he would find himself under the necessity of launching a new attack in a different direction. This would entail the loss of a great deal of valuable time.

> "In the larger units, when the original deployment is found to be in the wrong direction, it will usually be necessary to deploy reserves on the correct front, and withdraw and assemble the leading echelon." (*Infantry Drill Regulations, A. E. F.*, Part I, par. 356.)

Plan 4 has very serious disadvantages. By the time General A could reach this position a considerable part of the enemy's forces would have passed it. The enemy by leaving a small retaining force might be able to escape completely. The hills offer cover for deployment but the valley behind is so narrow as to be little more than a defile. The troops in assembling would be so congested that they would suffer severe losses if the enemy brought the defile under artillery fire before the attack was launched. The western slopes of these hills are very steep and wooded; they would offer a serious obstacle to the advance of the troops and would break up the formations to some extent before the enemy was ever encountered.

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Plan No. 5 offers the best chances of success. The wooded ridge connecting hills 724 (southwest of Diehl's Mill) and 742 offers excellent cover for the deployment of the command. This ridge also gives an excellent opportunity for the machine guns to support the attack by overhead fire. Hill 706 and the ground in the vicinity of road junction 590 afford good positions for a regiment of artillery. Hill 923 will provide excellent observation posts for control of the artillery fire and is suitable for the command post of the brigade commander where he will have a view of every movement of the enemy and of his own troops.

The roads to the west of the position are excellent for moving the troops quickly into position. The Diehl's Mill—545—Rhodes Mill road, just south of Middle Creek, makes it possible to move troops, under cover, for an enveloping movement to the east, or should the enemy turn to the east, it could be used to great advantage to push troops forward to cut him off. The roads to the north of Middle Creek are convenient for moving troops quickly to the east should the movements of the enemy render such action necessary.

Should the enemy take up a position to defend Emmitsburg, the position is entirely suitable. In this case General A would have to make an approach march of some distance, but this could not be avoided as there is no good position nearer under the cover of which General A could deploy and attack.

Should the enemy, contrary to General A's expectations, prove to be greatly superior, and attack General A, the position is entirely suitable as a defensive position for General A's command. The frontage of the position is about 2,000 yards which is not excessive for such a command. The left flank rests on Middle Creek which is considerable of an obstacle. On the right flank is McKee Knob which is so steep and heavily wooded as to render it impracticable for the enemy to advance from that flank. Any attack of the enemy then would have to be a frontal attack. The position is very strong from the point of view of a frontal attack. The woods on the east slope of the ridge offer unusually strong positions for infantry and machine guns with an ex-

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cellent field of fire up to the limit of effective range. The crests of the hills and ridge afford excellent positions for a second tier of machine guns using overhead fire. The woods on the northwestern slope give cover for a reverse slope position. The wooded slopes of hills 781, 923, and 706 are excellent positions for a reserve line. The 650—585 road furnishes excellent communication within the position while there are three good roads leading directly to the rear of the position. Should withdrawal become necessary it would thus be a relatively simple thing.

DECISION

General A decides to take up a position in readiness behind the ridge connecting hills 724 and 742; to place a battalion of infantry with machine guns, Stokes mortars, and 1-pounders in position at the southern edge of the woods on hill 724 and another battalion with auxiliary weapons at the southern edge of the woods on hill 742, these battalions to be prepared either to defend the position against an attack of the enemy, or to go forward as assaulting battalions; to place the remainder of the troops in assembly formation west of the ridge, ready to either attack or defend.

ORDERS

General A had with him his adjutant and aids, Major A, commanding the advance guard, the artillery commander, and the brigade machine gun officer.

General A gave the following verbal orders to Major A, commanding the advance guard:

> "Turn your support and reserve to the southeast on this road and have the senior captain conduct it to crossroads 650. Assemble your advance party and have it follow in rear of your reserve. Battery A, 1st Light Artillery, ceases to form part of your command. Report to me here in ten miutes for further orders."

General A gave the following verbal orders to Lieutenant Y, his aid:

> "Proceed rapidly to the head of the main body and direct Colonel A, commanding 1st Infantry, to report to me here as soon as possible. After you have delivered that message, direct the 1st Light Artillery and 2d Infantry to turn to the southeast on the 611—613—590 road and proceed to 590. Direct Colonel B, commanding 2d Infantry, to report to me at hill 923."

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When Colonel A and Major A had reported, General A dictated the following order to those officers, his adjutant and aid, the artillery commander, and brigade machine gun officer:

"The advance guard of an enemy force of infantry, machine guns, and artillery turned north 500 yards west of Emmitsburg on the 475—493 road at 7:25 AM. The enemy's column extends to the south on the Woodsboro Road for about 6 miles. The column is probably a reinforced brigade.

"This brigade will take up a position in readiness to the north of the ridge connecting hills 724 and 742, and will be prepared to attack the enemy. March conditions now cease.

"Troop A, 1st Cavalry, will take up a position in the vicinity of hill 789 to cover the right of the brigade. It will continue its reconnaissance to the south making every effort to determine the strength, composition, movements and intentions of the enemy.

"The 1st Battalion, 1st Infantry, with machine gun company and auxiliary weapons attached to it, is now enroute to crossroads 650. Colonel A will make the following dispositions of the 1st Infantry. The 1st Battalion will take up a position along the edge of the woods on the southeastern slope of hill 742. It will make its dispositions to meet an enemy attack but will maintain such a formation as to be able to attack as an assaulting battalion.

"One battalion, 1st Infantry, with 2 sections each of Stokes mortars and one-pounders, and a machine gun company from the 2d Machine Gun Battalion will take up a position on the southern slope of hill 724. It will make its dispositions to meet an enemy attack but will maintain such a formation as to be able to attack as an assaulting battalion. The Diehl's Mill—Rhodes Mill road will be patrolled. Both battalions will push patrols vigorously to the southeast.

"The remaining battalion of the 1st Infantry will take up a position in assembly formation in the woods on the southeastern slope of hill 781.

"The 2d Infantry will take up a position in assembly formation in the vicinity of road junction 604.

"One battalion of the 1st Light Artillery will take position in observation in the vicinity of hill 706 and the other battalion in the vicinity of 590. Battery A will be placed in position as soon as possible. The artillery will make preparations to fire on the country to the east and south of hills 724 and 742 and on the Emmitsburg—Knoxlyn road.

"One company of the 2d Machine Gun Battalion will report to the commanding officer, 1st Infantry, at once. The remainder of the battalion will take up a position in assembly formation in the vicinity of crossroads 650. Positions on the 724—742 ridge, suitable for supporting an attack to the southeast, will be reconnoitered and fire data prepared.

"The 1st Ambulance Company will select a dressing station near the center of Fairfield and will take position in readiness in the vicinity of this station.

"The artillery combat train will join the regiment.

"Ammunition will be issued to only the front line battalions of the 1st Infantry. The empty wagons will be held with the battalions.

"The field trains will remain at Orrtanna.

"Infantry and artillery regiments and 2d Machine Gun Battalion will be connected with brigade command post by telephone.

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Command posts:

"1st Brigade: hill 923.
"1st Infantry: orchard north of hill 742.
"2d Infantry: crossroads 604.
"1st Light Artillery: hill 923.
"2d Machine Gun Battalion: hill 742.
"Copies to Troop A, 1st Cavalry; 2d Infantry; 1st Ambulance Company; commanding officer of trains."

General A wished to hold as much of his force as possible in assembly formation until he had more definite information of the strength and intentions of the enemy. He must, however, place some troops in position ready for immediate defense should the enemy attack. He considered that two battalions with auxiliary weapons would offer sufficient resistance to permit him to place the remainder of his troops in position should it become necessary to take up a defensive position. The ground between the Diehl's Mill—Rhodes Mill road and Middle Creek cannot all be covered with rifle or machine gun fire and for this reason General A directed that the remaining Stokes mortars and 1-pounders of the 1st Infantry should be attached to the left front line battalion. General A did not direct any preparation of the position for defense, for in such preparation of the ground the troops would get out of hand to a certain extent. He considered it of more importance to retain the troops in such formations, ready for an attack that could be quickly launched, than to require that a small amount of digging be done.

In case the enemy should turn to the east, troops placed in rear of the left of the line could move more quickly in that direction, as the Diehl's Mill—Rhodes Mill road is defiladed from the south. For this reason, General A placed the bulk of his infantry in rear of the left of the position, retaining only one battalion in rear of the right.

General A might prefer to attack with the two regiments abreast, which would have necessitated putting a battalion of the 2d Infantry in the front line. There was not time for this, however, as the enemy was much nearer to the position than was the 2d Infantry. His arrangement of holding a complete regiment in rear of the left flank, rather than parts of two regiments, would prove to be a decided advantage should it become necessary for General

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A to move to the east for some distance before launching his attack. He would have a complete tactical unit at his disposal for the attack in that direction.

It will take the machine gun battalion only a few minutes to move into position to support the attack if the positions have been previously reconnoitered and the fire data has been prepared. The battalion can easily occupy such positions after it becomes apparent that an attack can be made. Should it become necessary for General A to fight on the defensive, the positions would be very different from those that would be taken for the attack. Part of the guns would have to be moved to the rear to the wooded slopes of hills 706, 923 and 781, while the remainder would have to be distributed along the whole length of the 724—742 ridge. It is therefore best to place the guns in such a position that they can readily be moved to positions to carry out their mission.

The artillery from hill 706 and the vicinity of crossroads 590 can enfilade the Emmitsburg—Knoxlyn road and can bring an oblique fire on any enemy attack against the position that has been taken up. The artillery is close enough to what would be the line of departure in case General A attacks, that it can support the attack for some time without a change of position. Even should the enemy turn to the east the artillery from these positions could bring effective fire to bear on him. Should it become necessary to move to the east the battalion at crossroads 590 occupies an extremely favorable position. Hill 923 offers an excellent observation post for both battalions.

The ambulance company should be able to find excellent facilities in Fairfield for establishing a dressing station. There will probably be some shelling of the town, but there should be basements available which would be relatively safe. The roads leading to the front, with the cover afforded by the ridge, afford excellent advantages for the evacuation of the wounded.

The two battalions that issued ammunition may never fight in the vicinity of their present positions. In that case they would probably become the reserve. Under such circumstances the ammunition might well be replaced on the

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ammunition wagons. For this reason the empty wagons were not directed to proceed to Orrtanna to refill. To issue ammunition to all the troops would be a serious mistake as it would hamper them greatly should the enemy turn to the east, thereby making necessary a considerable march before an attack could be launched.

The field trains have not yet left Orrtanna and there is every advantage in leaving them there where they have the protection of the remainder of the division.

Telephonic communication would be established between the regiments and the machine gun battalion and brigade headquarters. General A considers it necessary to order it, for there might be a doubt in the mind of the signal officer as to whether telephones should be installed.

General A directs that the artillery command post be on hill 923, since he wishes to be in very close touch with the artillery. A similar reason might have caused him to put the command post of the 2d Infantry at the same place but in case it is necessary to use this regiment in an unexpected direction it is highly desirable that the colonel be in immediate touch with his battalions. General A can communicate his orders to the colonel by telephone better than the colonel can transmit his orders to three majors.

In moving the troops into position, General A permitted the 1st Infantry and the 2d Machine Gun Battalion to move through Fairfield instead of turning them off on the 611—613—590 road. The road through Fairfield is shorter for 2d Machine Gun Battalion and for the battalion 1st Infantry, which is to take position on the west slope of hill 781, and is probably 100 yards longer for the battalion 1st Infantry, which is to take position on hill 724. By sending these troops through Fairfield the 611—613—590 road is left free for the artillery. It can thus take up an increased gait and get into position very much sooner that it could with other troops on this road. This road is very much shorter for the 2d Infantry and since it is following the artillery it can use the road without interfering with the artillery getting into position. It is important that the artillery take up its position as soon as possible as it may have an opportunity to fire on important targets at any time.

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(E-3) THE DIVISION—A POSITION IN READINESS

A Map Problem and an Approved Solution

COLONEL L. R. HOLBROOK,
Field Artillery

Maps: Gettysburg-Antietam General Map and 1:21120, Bonneauville, Kingsdale, Gettysburg Sheets.

General Situation:

The Susquehanna River separates the western Blues from the eastern Reds. A Blue corps with its 1st, 2d, 3d and 4th Divisions at Gettysburg, Hagerstown, Chambersburg and Shippensburg, respectively, has been ordered to invade the Red territory via York and Lancaster.

Special Situation (Blue):

The 1st Division is ordered to cover the movement and to develop the enemy reported to have crossed the Susquehanna at Wrightsville. The 2d, 3d, and 4th Divisions are ordered to regulate their marches so that their advance guards shall clear the passes through South Mountain and camp on the night of August 23-24 in the vicinity of Fairfield, Cashtown, and Arendtsville, respectively, and the 1st Division shall guard the line of the Little Conewago, in the vicinity of Brushtown.

At 2:00 PM, August 23d, the 1st Division, in the following order, is marching in two columns over the Hanover Road and Baltimore Turnpike with the heads of its main bodies approaching the Low Dutch Road.

LEFT COLUMN	RIGHT COLUMN
Advance Guard	*Advance Guard*
1st Brigade (less 1st Infantry)	1 battalion, 1st Infantry
1st Light Artillery (less 1st Battalion)	
Company B, 1st Engineeers	
3d Ambulance Company	
Main Body	*Main Body*
1st Field Signal Battalion	1st Infantry (less 1 battalion)
Division headquarters	1st Battalion, 1st Light Artillery
2d Brigade (less 4th Infantry)	Company A, 1st Engineers
3d Field Artillery Brigade (less 1st Light Artillery, 3d Heavy Artillery)	4th Ambulance Company
4th Infantry	
1st Engineers (less 2 companies)	
Division machine gun battalion	
3d Heavy Artillery	
1st and 2d Ambulance Companies	

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The 1st Squadron, 1st Cavalry, covers the division in its march.

The field trains and division trains are parked between Seven Stars and Gettysburg along Chambersburg Pike.

At this moment General A receives information through his cavalry and air service that two columns of Reds of all arms, strength unknown, are approaching Hanover from the northeast—heads of the main columns were about 15 miles east of the Little Conewago at 10:00 o'clock this morning, and covering patrols of both columns were leaving Hanover for the west and southwest at a little after 1:45 PM.

Required:

1. General A's estimate of the situation.
2. The formal field orders of General A, assuming no change in the situation in the next 45 minutes.

An Approved Solution

Estimate of the Situation

It is probable that if the columns of Reds were strung out on the road this morning at 10:00 o'clock they had already been in march several hours.

At 2:00 o'clock the heads of these columns would most likely be approaching the proposed camping place for the night for they would have covered about 15 miles if marching since 8:00 o'clock. At 2½ miles per hour they would now be about 5 miles east of the Little Conewago unless checked by our cavalry, the right column in advance, and it is possible that advance elements of the Reds might be ordered to secure the crossings of that stream before night. Being "of all arms," they are accompanied by cavalry. General A does not, however, consider it possible for the Reds to reach that stream tonight in sufficient time to deploy and attack him, should they prove to be in superior numbers, and should he take up a defensive position west of the river.

It is about 20 miles from the Little Conewago back to the heads of the main body of the Blue divisions, and General A can count on little support before noon on August 25th, should he choose to defend that line; the Reds could hardly develop the Blue position, deploy and attack in force

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before early on the morning of August 25th, so that General A might find himself obliged to stand off perhaps two or more divisions for half a day before being ably supported; or it might develop from reconnaissance that he would have to fight only a single division—barely possible, a smaller command.

For the present he decides to develop the enemy by further cavalry and aerial reconnaissance, push on and seize the crossings of the Little Conewago as ordered, reconnoiter available defensive positions, select a position in readiness, and await further information before deciding positively upon his future action.

While at this time it is impossible to say just where the Reds will attempt to cross the Little Conewago, the position extending across the roads on which General A is now marching will block their advance unless they make a change of route. In that case, occupation of position could be extended to meet the situation, as the positions possible of selection favor such extension.

General A decides that, in any event, he must halt the advancing Reds far enough east of Gettysburg to prevent their harassing (with their artillery) that place and the roads radiating therefrom, for these will play a most important part in the movement of the Blue corps.

From map inspection, General A observes the following positions that can be used for defense in case of necessity:

First: From west of Littlestown—hill 621—hill 647 northeast through Centennial; or possibly hill 652—hill 647 (east of Littlestown), hill 647, Centennial, securing excellent observation that should be denied to the enemy, if practicable.

Second: A shorter position about 1,200 yards west of No. 1, but not reaching to the Baltimore Turnpike except by breaking back to Whitehall and thence southwest.

Third: From near Gidd on the Baltimore Turnpike northeast through Square Corners.

Fourth: From Germantown northeast through St. Luke's Church and Square Corners or through St. Luke's Church and northwest toward Gallagher.

Fifth: Other positions suitable for defense are seen nearer to Gettysburg, but they would not halt the enemy at a sufficient distance to prevent artillery fire on Gettysburg and vicinity.

SELECTION OF POSITION

Position No. 1: Affords to ourselves excellent observation of the crossings of the Little Conewago, its west branch and beyond, blocks the two roads along which the enemy

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seems to be advancing, and has excellent cover immediately in rear for movement of troops. The Marysville—Gebbhardt ridge affords cover for reserves. It is believed better to hold the high ground east of Littlestown (652—647) as a part of the outpost system and to refuse the right flank rather than to establish it in the direction 647, southeast of 652.

Position No. 2: This ridge with the Whitehall—Bair branch east of Plum Creek is not difficult of occupancy for defense, but gives up observation of the valley of the Little Conewago as soon as the outposts are driven in, and it is paramount that observation shall be maintained.

Position No. 3: Excellent for defense, retains good observation from St. Luke's Church area and occupation is easy of extension to the north should the enemy attempt pushing around that flank. It would be difficult to retire between Whitehall and Square Corners on account of level ground, although the protection of several groves is afforded.

Position No. 4: Gives excellent opportunities for deployment in case the enemy breaks around to the north. It gives sufficient freedom of movement for reserves and reinforcements, but affords no good supporting positions within a suitable distance for falling back. It affords little useful distant observation, except from Granite Hill, in possible future developments to the north.

Position No. 5: Too close to Gettysburg for consideration, and retirement to it is not to be thought of except in great emergency, when the division is on a strictly offensive mission.

General A's Decision

General A decides to take up a position in readiness with a view to possible defense of the ridge (covering the Little Conewago) 621—Pleasant Hill S. H.—647—Centennial, with outposts guarding the line of the Little Conewago and its west branch, with his forces, in general, assembled behind the Marysville—Gebbhardt ridge; or to take the offensive should the opportunity be presented.

This will permit him to carry out his order "To guard the crossings of the Little Conewago," place him in a favor-

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able position for offensive action, or enable him to hold off a superior force until the corps can come to his aid, falling back upon the several parallel positions in retirement should this become necessary—meanwhile covering his flanks with his cavalry.

Unless otherwise influenced by new information, he will therefore issue the following order:

GENERAL A'S ORDERS

1st Div,
SQUARE CORNERS,
24 Aug 19, 2:45 PM.

FIELD ORDERS
No 2

Map: Gettysburg-Antietam, 1:21120.

1. Red columns of all arms are reported approaching the LITTLE CONEWAGO from the direction of HANOVER toward BRUSHTOWN and SELLS STATION. Strength and present disposition are being developed by our cavalry and the air service.
   Advance guards of our supporting divisions camp tonight near FAIRFIELD, CASHTOWN and ARENDTSVILLE.
2. This division will guard the crossings of the LITTLE CONEWAGO, and its west branch from 577 (east of LEFEVRE) to 481 north of MARYSVILLE and take up a position in readiness in rear of the CENTENNIAL—LITTLESTOWN ridge. Conditions of march cease.
3. (a) The 1st Sq, 1st Cav will continue its reconnaissance of the enemy, delaying his advance, and, in falling back, cover our left flank and guard the crossings of the LITTLE CONEWAGO from 481 (west of IRISHTOWN), exclusive, to DIEHL'S MILL (north), inclusive, with troops, and our right flank between LEFEVRE and KINGSDALE with one troop.
   (b) 1st Obsn Sq will report the disposition and movements of the Red forces.
   (c) The 1st Brig (less 1 bn designated for division reserve) will assemble along ALLOWAY CREEK near WHITEHALL S. H., secure and guard the crossings of the LITTLE CONEWAGO and its west branch from the crossing of the LEFEVRE—CENTER S. H. road, inclusive, to the LITTLESTOWN—HANOVER electric line, exclusive.
   (d) The 2d Brig (less 1 bn designated for division reserve) will assemble in the vicinity of the VALLEY S. H. on both sides of the main road, secure and guard the crossings of the LITTLE CONEWAGO from the LITTLESTOWN—HANOVER electric railroad inclusive, to 481 (north of MARYSVILLE), inclusive.
   (e) The division infantry reserves and division machine gun battalion will assemble in the vicinity of ST. LUKE'S CHURCH.
   (f) The 1st FA Brig will go into positions of readiness under cover of the MARYSVILLE—GEBHARDT and SQUARE CORNERS—WHITEHALL ridges, one regiment of light artillery disposed to support each infantry brigade (from hill 607 south and north) and the heavy artillery regiment in general support. It will prepare firing data on distant objectives, especially the roads from HANOVER and prepare for a close defense of the CENTENNIAL—LITTLESTOWN ridge, making reconnais-

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sance for positions in the vicinity of CEDARRIDGE for possible defense of the LITTLE CONEWAGO, as far north as one mile beyond DIEHL'S MILL.

(g) The 1st Engrs (less dets) with the division reserve. Thorough reconnaissance will be made of crossings of the LITTLE CONEWAGO with view to possible destruction of bridges along the outpost line.

Two officers will be sent to each infantry brigade commander to consider with him the possible means of defense of the CENTENNIAL—LITTLESTOWN ridge.

(h) 1st F Sig Bn (less dets) will assemble with division reserve.

(x) Each brigade will establish an outpost covering its front and flanks, the 1st Brig from hill 607, inclusive, south and the 2d Brig north, and thoroughly reconnoiter the CENTENNIAL —LITTLESTOWN ridge, utilizing the same as an outpost line of resistance, developing its possibilities as a general line of defense in case of attack. The LITTLESTOWN—HANOVER electric R. R. bridge, the road crossing hill 607, crossroad 601, BONNEAUVILLE road, inclusive, is designated as the northern limit of the 1st Brig sector in case of occupation of the position for defense, and this line, exclusive, the southern limit of the 2d Brig sector.

4. (a) The San Tn will be assembled at BONNEAUVILLE.
(b) The F and Engr Tns will continue their march to BONNEAUVILLE and there receive further orders.
(c) The Am and Sup Tns will park along WHITE RUN near the main highway.

5. Command posts:
Div and Arty Brig: SQUARE CORNERS.
1st Brig: VALLEY SCHOOL HOUSE.
2d Brig: WHITEHALL S. H.

A,
Maj Gen.

Copies to:

CG	Div MG Bn
Div Staff	1st Engrs
1st Sq 4th Cav	1st Obsn Sq
1st Brig	1st F Sig Bn
2d Brig	CO Tns
1st FA Brig	1st Corps (4 copies)

The Position in Readiness

GENERAL COMMENTS ON SOLUTIONS

1. The estimate of the situation, in this problem, should culminate in a decision as to a general plan of action only. In other words, General A decides what he will do (i. e., how and where he will dispose of his force as a whole) in order to carry out his mission—not how he will employ each unit in the execution of his plan.

2. In determining the plan of action few students noted either the long march already made by the Reds, and the comparative freshness of our troops, or the facts that our division was covered at a distance by our cavalry, and that

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for the next 45 minutes after 2:00 PM the air service brought in no new information in regard to the approaching Reds. Our mission, being known to all, it might well be assumed that a situation was not developing during the 45 minutes, which would prevent our continued advance to carry out the same.

A number of students promptly halted for the night—and many made no effort to carry out the specific mission given, although they had met with no opposition and had no information that patrols were even in contact. It was important that the line of the Little Conewago should be held, even if its possession required driving back advanced forces of Reds.

3. The length of time that General A had to sustain himself without aid from supporting divisions, the necessity for keeping the roads clear for the corps, or making Gettysburg (the neck of the bottle) safe for advancing troops and free from congestion, were seldom commented upon.

4. *The Order*: It is considered that the order is more appropriately headed *1st Division* than *Advance Guard, 1st Army Corps*.

5. *Par. 1* should state facts. A majority of students stated that "the 2d, 3d and 4th Divisions camp tonight at Fairfield, Cashtown and Arendtsville," giving the impression of closer support than actually existed, whereas advance guards only had been directed to reach those towns.

6. *Par. 2*: Nearly every student stated that the "division will take up a position in readiness—" but many failed to say where—or for what purpose.

In this paragraph the *plan* and *mission* should be briefly given and it should be plainly stated in *what area*, or *vicinity of what places* the position in readiness is to be taken up, "with a view to defending the line—" if this be the case; and the fact that the division is to guard the line of the Little Conewago should appear. Knowing this much of General A's plan, commanders of all units could work together in harmony; but not one student in ten outlined a definite plan in this paragraph and stated the mission.

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6. *Par. 3*: The first units to be considered in this paragraph are the cavalry and the air service. Their reports are unsatisfactory and immediate forceful orders should be given them to secure more definite information. It is to be expected that, ultimately, the cavalry will be driven in, and it should know where to retire. Is the cavalry to *cover* or *destroy* the bridges of the Conewago (somebody should be responsible for them, but seldom was anybody specially charged with guarding them); or, is it to fall back on the flanks—and if so, how many troops on each flank? Certainly our right flank is the weakest, and it must be defended by infantry if attacked. The bridges far to the north should not be overlooked. A comparatively large cavalry force should guard the left flank; finally, in order to relieve the infantry from this distant duty, a small force should cover the right flank and prevent surprise.

7. It is too early to assign airplanes to the artillery if for the present the artillery has ample opportunities for terrestrial observation. The air service should be entirely free for reconnaissance. The artillery requires airplanes only for adjustment on points or targets not well observed from observation stations.

8. Next, the infantry brigades as such should have been disposed of, their commanders being recognized and given definite missions. They were too frequently given such indefinite instructions that there could have been no confidence on the part of either the division commander or the brigade commanders that they were working in harmony. The missions should have been *general* but *positive* and have left no doubt as to the role each was to play.

A definite section for each to reconnoiter, study and prepare might well have been assigned, but certainly there should have been no "occupation of position" ordered, until the enemy had committed himself to some line of action.

9. Frequently troops were ordered to "*take up* a position," "*occupy* a position (or line)," or were assigned sectors without orders as to disposition, when it is believed the intention was that they should *assemble, take position, take station* or *camp*, with view possibly to occupying certain portions of a designated line in emergency only. Gen-

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erally orders were not sufficiently explicit, the division commander speaking ambiguously, rather than coming right out and in unmistakable terms saying exactly what he wanted done, and who was to do it.

10. This was certainly a time to get the division in hand to fight, and, regardless of what preliminaries were considered necessary, the finish should have found the division with its brigades side by side, in flexible formation to meet any emergency, well prepared for defense, but not committed to it by actual occupation of position, and well disposed to take up the offensive. This is not attained by ordering troops to be disposed for resistance and battalions to be held "in assaulting formation" at the same time; but the *disposition* of troops ordered should enable the commander to handle them with facility, and the dispositions should show it.

11. Frequently paragraph 2 stated that a "position in readiness" would be taken, whereas paragraph 3 ordered actual *occupation of a position* to the extent that all flexibility of command and consequent "readiness to meet any move of the enemy" was destroyed. The disposition ordered in paragraph 3 should show a true state of readiness to meet the attacker's lead, and should not handicap the division commander if he is expected to assume the offensive without a loss of morale, or lowering of confidence in him.

12. *Next should follow the assignments of the artillery,* in support of designated infantry units, whose sectors of possible action are already outlined. As in the case of the infantry, the artillery brigade commander should be recognized and he, or his brigade, ordered to give certain support. The missions must be specific (general as they may be), *but artillery cannot go into a "position in readiness" or "observation" without first being given their missions.* Each unit should know the sector it *watches.* Any preparation the artillery may make for defense need not destroy its mobility or morale. Any neglect to prepare for a probable engagement is criminal. Positions can be selected and data prepared, without committing this arm to any line of action. This is officers' work, and preparation for possible action should not be neglected. Nothing can be done without specific missions, but so far as the guns and men and

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horses are concerned, they can remain in assembly formation, at rest or in camp, if the emergency be not great.

13. Next should follow the instructions for the engineers, and they should be given engineer missions. These instructions should provide for assignment of officers to assist infantry brigade commanders in studying plans for possible defense, reconnoitering bridges and preparing them for destruction if necessary; possibly for the construction of additional bridges, etc. The assignment of engineer troops to assist the artillery at this time, or act as a fighting division reserve is not warranted, but like all other troops, they should be given a station for the purpose of supply and accommodation.

The signal battalion (few members of which will actually be present) will be assumed to be at division headquarters if not given station, but the laying of wire should not be ordered so long as units are in assembly formations and apt to move at any moment. Messengers and wireless are sufficient below brigades. Field wire should be conserved; its supply is not unlimited.

14. *The division reserve* may be mentioned after the infantry, or here as may seem more logical, but in either case it should be furnished from both brigades, unless it appears plain that this reserve is almost sure to be used on a flank. Then if that flank can be determined, the reserve should be so selected that it will join its own brigade. The mixing of units should be avoided, so far as possible, by anticipating where they are to be used. If this is not determinate, each brigade should be drawn upon for an equal force—say one battalion each—or more according to circumstances. Let the brigades go into action on equal footing if there is no reason to the contrary.

15. *Par. 4*: If the situation does not call for an administrative order, all trains must be provided for here. It is not sufficient to leave them between Gettysburg and the rear, blocking the roads for supporting troops. This is an easy way to avoid disposing of them in the order; but above all they should be gotten at least east of Gettysburg. The engineer train should be brought up at once on account of the tools it carries for the infantry; the sanitary

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train should be located for emergency disposition in combat; the field trains should advance so as to join their units for the night if this is practicable, and the ammunition and supply trains to where suitable accommodation is found and from where they can be moved quickly to meet the emergency without interference with other troops.

16. It would be better to assemble the whole sanitary train awaiting developments, but ambulance companies might be assigned suitable station in the combat area.

17. *Par. 5*: Until a plan of action develops, it is too early to announce an axis of signal communications.

Command posts for the division commander (and perhaps his 2d echelon) and those of all three brigade commanders should be announced, but not those of lower units.

18. *Note*: A brigade of artillery is made up of three regiments and *no special troops*, unless specially assigned.

On the march the *brigade* (*less certain regiments*), or a *regiment* (*less certain battalions*) is properly assigned a place in column, but for combat, never. Each regiment and each battalion is complete in itself and should never be ordered to move into position with a next higher headquarters. It was frequently so ordered by students in this problem—but apparently for camouflage only, so as not to overlook special units that might happen to be a component part of the brigade. If there were any such units, they would be trench mortars and on account of their limited range, if for no other reason, they would never go with a regiment or battalion. The artillery has a certain number of machine guns or automatic rifles, but these are permanently assigned to batteries, and require no special consideration in an order.

Extracts From Special Comments on Students' Solutions

1. You have failed in your mission "to secure the crossings of the Little Conewago"—and without good reason. You have not been checked and you do not even know that you have actual contact.

2. You have three competent brigade commanders. Why not use them instead of working out small details which they could better handle?

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3. It would be better to say the 2d Brigade will *take position,* or *assemble by regiment,* or *"will be placed,"* rather than *take up a position,* or *occupy* a designated place, which expressions are generally understood to mean take up or occupy a position in defense, and this should not be what you mean.

4. After stating that the division will take up a position in readiness, it is not advisable to direct the subordinate elements (except the artillery) to do the same. For subordinate units other than the artillery, this expression has no special significance. Their part in getting the division into a position of readiness should be accomplished by specifying exactly in what formation and where they should be.

5. It is believed better to state both the approximate location of "position in readiness" and the line to be defended in emergency, as well as the general mission to be carried out.

6. Do not confuse your "position in readiness" with the "defensive position." They are generally entirely different, in fact the former is a *disposition of troops,* perhaps covering a considerable area; the latter generally a *line or a natural position* for defense.

7. Paragraph 2 might well disclose something more of General A's plan. In the very presence of an enemy, possibly stronger than himself, whom he is almost sure to fight early in the morning, this maneuver should not be a simple halt. No mention is even made in General A's order of plans to carry out his mission and in no way has he been checked.

8. The bridges should not be ordered destroyed yet. Perhaps you will find them useful. Their absence would only delay the enemy a little, as the stream is apparently not much of an obstacle.

9. It is premature to order the defense of the line or position, the enemy's intentions not yet having been developed.

10. Later orders will certainly issue for tomorrow's operations. General A should not now give orders that may not be appropriate then, and which are not to be executed today.

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11. Better order the cavalry to look after our flanks eventually and hold the infantry responsible for guarding the Little Conewago. Forces are too close not to provide for this now and it is General A's specific mission.

12. Neither flank should be neglected by the cavalry in falling back.

13. If the division machine gun battalion is to join the cavalry, it should be stated in the paragraph pertaining to that arm as well as elsewhere.

14. The division not considered sufficiently well assembled in large units for all possible future action.

15. No assignments of airplanes to our artillery should be made until your plan develops more definitely. With perfectly good terrestrial observation, the assistance of airplanes is not yet so important.

16. All specific instructions to the artillery or to any other unit should come under a single paragraph.

17. Your instructions to the artillery are insufficient. You ignore the brigade commander and do not give clear cut and definite missions. Missions must be made known either by the division commander or the artillery brigade commander before battery positions can be selected and firing data computed.

18. The artillery brigade commander should be recognized in your order and given specific missions such as assignment of units to sectors, or to the support of designated units.

19. Artillery missions are vague and incomplete. There is no objection to making them general and leaving to the artillery brigade commander the selection of the method to carry them out.

20. Your advance battalions of artillery would hardly be placed on or in advance of your first line of defense. They should be placed so as to defend this line from positions generally not less than 1500 or 2000 yards in rear.

21. All of your artillery should have been placed in positions for action, and definite missions assigned. Firing data should have been prepared during the hours of daylight for all available guns.

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22. It is too soon to order field trains actually to join their units. Better have them advance and later receive instructions.

23. The engineer train should have been ordered well to the front as it carries infantry working tools that may be required.

24. It would be better to order all division trains to definitely clear Gettysburg (to the east). This point may easily become congested with troops and traffic early tomorrow morning.

25. You appear to have made a disposition rather more favorable for resuming the march than for any emergency that might arise.

26. As it is possible that either an offensive or a defensive action will follow, it is considered that a division infantry reserve should be designated, and that all division reserves should be concentrated well to the rear and either centrally or somewhat toward the right flank, which is the more exposed.

27. No provision is made for security of flanks, or to meet easily moves of the enemy other than on the roads now covered.

28. Had you prepared your brigades for action side by side, assigning sectors to occupy in case of necessity, giving your artillery broad and specific missions, covering flanks as well as the front which the enemy may likely avoid, you would have better prepared for the possible work of tomorrow. An attack by the enemy will probably cause a wide deployment from your center. Where a single brigade covers the entire front, reinforcement without mixing of units is difficult.

29. It is too soon to order any occupation of position by any infantry unit.

30. All brigade commanders should be given very specific missions and allowed discretion.

31. In making so much preparation for defense, an infantry reserve should have been designated.

32. Pending issue of outpost orders, infantry brigade commanders should have been charged with guarding the bridges of the Little Conewago.

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33. You have not prepared to fight as a division, but have practically made two independent commands, giving up ready control of your light artillery. This is a time when you should have made general dispositions to meet any emergency, and worked in conjunction with all three brigade commanders. As division commander you cannot now so easily control an emergency situation.

34. This is, first of all, an occasion requiring strength in the first line, and rather shallow depth. If you could have taken up the advanced position, that should have been your main position.

35. Any disposition where your brigades are not destined to function eventually as brigades in the defense of the selected position is wrong.

36. Your plan is not yet sufficiently crystallized, nor are positions definitely enough fixed to order telephone communications put in by Signal Corps.

37. Each brigade should have furnished its own outpost to avoid any mixing of units in attack.

38. All units should have been given a station for the night on account of supply.

39. You could have easily made more complete arrangements for a defensive action, which appears quite favorable without committing yourself to it. You are hardly playing safe or making the best preparation for tomorrow.

40. It is not understood why you pushed your 2d Brigade between the two regiments of the 1st Brigade. The 1st Brigade (less 1st Infantry) could easily have been moved to the right instead of the left and unity of command effected.

41. Only as a last resort should engineer troops be used as a fighting force.

42. Troops are not detailed to support artillery, but to "guard" or "protect" it.

43. It would appear that, inasmuch as your division (leaving from in and about Gettysburg) must be fresh as compared with the enemy after a full day's march, and that it is at a distance, the least you should have aimed to do would have been to push out far enough from Gettysburg to cover it from artillery fire as it certainly should be kept

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free for the movement of corps troops tomorrow. This is a time when you should have organized for any kind of a fight that might develop. If forcibly prevented from accomplishing your mission "to guard the crossings of the Little Conewago," a disposition (on some ridge in rear) as suggested in paragraph 28 above is considered appropriate.

44. You do not bring out in your order the necessity of holding the line of the Little Conewago, which is specifically your mission.

45. A fighting division reserve of two battalions of infantry might well have been designated.

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(E-4) A FLANK POSITION IN READINESS

A Map Problem and an Approved Solution

MAJOR DUNCAN K. MAJOR, JR.,
Infantry

Maps: General Map, Gettysburg-Antietam, 1"=10 miles.
Gettysburg-Antietam Geological Survey, 1:62500.
Gettysburg-Antietam, 1:21120, Knoxlyn, Gettysburg and Arendtsville Sheets.

Situation:

The 1st Division (in friendly territory), which had been sent from Chambersburg to delay the advance of a strong hostile force reported marching on Carlisle from Westminster, reaches Knoxlyn on the afternoon of September 1, 1919, where it goes into bivouac with outposts along Willoughby Run.

In its bivouac about Knoxlyn, the division is disposed as follows:

Outposts: 1st Battalion, 1st Infantry. The outpost line extends from Chambersburg Road, inclusive, on the north, to J. Sacks (2500 yards southeast of Black Horse Tavern), inclusive, on the south.
1st Brigade (less 1st Battalion, 1st Infantry), south of Knoxlyn and east of Carr Hill, vicinity of 643—603—550—504 Road.
2d Brigade in woods south of Seven Stars, in vicinity of J. Herter Mill—555—597 road.
1st Machine Gun Battalion (motorized), McKnightstown.
1st Field Artillery Brigade (less 1st Light Artillery), vicinity of Seven Stars.
1st Light Artillery, vicinity of Gahney, north of Knoxlyn.
1st Engineers, McKnightstown Sta.
1st Field Signal Battalion, McKnightstown Sta.
1st Observation Squadron, Chambersburg.
1st Train Headquarters and Military Police, Cashtown.
1st Ammunition Train, Cashtown.
1st Sanitary Train, Cashtown.
1st Supply Train, Orrtanna.
Division headquarters and headquarters troop, McKnightstown.
Railhead: Orrtanna.

At 5:00 PM, same date, reports are received from the 1st Cavalry (which has been attached to the 1st Division for this operation), stating that at 3:00 PM, it had come in contact with a hostile outpost line astride the Baltimore Turnpike at Ashgrove S. H. (1½ miles northwest of Littlestown). From a captured officer's patrol it was further

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learned that the hostile force consisted of the 20th Red Division reinforced by the 56th Red Infantry Brigade and a squadron of cavalry, all of which were in bivouac at Littlestown and to the southeast thereof; that it was the Red commander's intention to continue the march on Carlisle on September 2, 1919, via the Baltimore Turnpike and Carlisle Road. The cavalry commander stated he would remain in contact with the enemy along the Baltimore Turnpike reconnoitering to the north and south.

No hostile airplanes had been observed during the day.

Required:

1. The division commander's decision, setting forth his general plan of action based on the above information.

2. His formal field orders to carry his decision into effect.

An Approved Solution

First Requirement:

General A's Decision

To take up a position in readiness along the ridge, Round Top—Little Round Top—hills 572—592—566 with a view to assuming a defensive-offensive attitude, depending upon the turn of events.

To accomplish this the division will be moved into an assembly position under cover of the ridge above mentioned. The movement will be made in two columns during the night September 1-2, 1919, heads of which to start at 10:00 PM.

The infantry brigades will be disposed side by side and in such a formation that a position for defense along the ridge can be promptly occupied, or, should opportunity offer, an attack launched against the enemy's flank.

The artillery will take up positions from which it can promptly open fire upon the enemy advancing on Gettysburg via the Baltimore Turnpike and support the defense or take part in an attack.

In order to deceive the enemy as to the occupation of the flank position, the cavalry will remain in contact with the enemy and retire slowly before his advance with the

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object of drawing him on Gettysburg, via the Baltimore Turnpike, at the same time screening the division's position from the hostile cavalry.

Second Requirement:

1st Div,
McKNIGHTSTOWN, PA.,
1 Sept 19, 7:00 PM.

FIELD ORDERS
No 10

Maps: General Map, Gettysburg-Antietam, 1"=10 miles.
Gettysburg-Antietam Geological Survey, 1:62500, Gettysburg-Antietam, 1:21120, Knoxlyn, Gettysburg and Arendtsville Sheets.

1. Our cavalry reports the 20th Red Div, reinforced by the 56th Red Brig and 1 squadron cavalry in bivouac tonight in the vicinity of LITTLESTOWN with outposts astride the BALTIMORE TURNPIKE at ASHGROVE S. H. Indications are the enemy will continue his march tomorrow on CARLISLE via the BALTIMORE TURNPIKE and CARLISLE ROAD.
2. This division will move tonight to a position in readiness under cover of the ridge, ROUND TOP—LITTLE ROUND TOP—hills 572—592—566, where it will be prepared to take up a defensive position to delay the further advance of the enemy, or should opportunity offer, to assume the offensive.
3. (a) The 1st Obsn Sq will make a reconnaissance at dawn tomorrow verifying the enemy's positions. Further reconnaissance will be made as directed by division headquarters.
   (b) The 1st Cav will continue to maintain contact with the enemy, falling back slowly on GETTYSBURG before his advance with the object of drawing him on GETTYSBURG, via the BALTIMORE TURNPIKE. It will screen the division's position and cover our right flank.
   (c) The 1st Brig will take up an assembly position under cover of VINCENT SPUR from which it can promptly assume the defense of the sector, ROUND TOP—LITTLE ROUND TOP (both inclusive), or upon notification from division headquarters, march to the attack. It will march from its present bivouac via the 550—519—BLACK HORSE TAVERN—W. PLANK—PITZER S. H.—590 road, head of column clearing road junction 550 at 10:00 PM.

   The 2d Brig will take up an assembly position, under cover, west of the 572—566 ridge (north of the 1st Brig) from which it can promptly assume the defense of the sector LITTLE ROUND TOP (exclusive)—hill 592—woods on hill 566 (inclusive), or upon notification from division headquarters march to the attack. It will march from its present bivouac via the CHAMBERSBURG—EMMITSBURG roads, head of column clearing road junction 597 at 10:00 PM.
   (d) The 1st MG Bn will follow the artillery via the CHAMBERSBURG—EMMITSBURG roads to the PEACH ORCHARD where it will await orders.
   (e) The 1st FA Brig will take up firing positions as follows: the 1st and 2d LA supporting the 1st and 2d Brigs respectively, east of WILLOUGHBY RUN They will follow the brigades which they support into position. The 3d HvA will occupy a position west of WILLOUGHBY RUN, moving into position

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after the light artillery has cleared the roads. Provision will be made to cover the BALTIMORE TURNPIKE and the open ground east of the WOLF HILL—J. TANEY ridge as well as the dead ground in front of ROUND TOP—LITTLE ROUND TOP. Fire will be opened upon notification from division headquarters.

(f) The 1st Engrs will at once prepare bridges over WILLOUGHBY RUN for infantry and artillery at the fords 800 yards north and 300 yards south of PITZER S. H. After passage of infantry and artillery, it will move to a position at the PEACH ORCHARD and await orders.

(x) The outpost will stand relieved when the advance guards cross the line of observation. It will then be assembled and join its regiment.

Every effort must be made to keep concealed, for the success of the operation depends mainly upon the surprise of the enemy.

4. See Administrative Orders No 15. SSW, house 400 yards west BLACK HORSE TAVERN.

Division and field trains will await orders at their present stations.

5. (a) Plan of signal communications: No change.

(b) Axes of signal communications: KNOXLYN—BLACK HORSE TAVERN—PITZER S. H.—road junction 580. Forward communication center at road junction 580.

(c) Advance Echelon, DHQ will close MCKNIGHTSTOWN at 5:00 AM, 2 Sept 19 and open same hour and date at PITZER S. H.

Div OP: ROUND TOP after 5:00 AM, 2 Sept 19.
2d Echelon: MCKNIGHTSTOWN.
1st Brig: J. SMITH.
2d Brig: J. ROSE.
1st FA Brig: PITZER S. H.

By command of Maj Gen A:

XY,
C of S.

Distribution:

CG
Div Staff
1st Cav
1st Brig
2d Brig
1st FA Brig
1st Engrs
1st Obsn Sq
1st MG Bn
Outpost Comdr
CO Tns
APM
War Diary

NOTE:—A warning message would have been communicated to all concerned prior to issuance of this order.

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CHAPTER VIII

River Crossings, Retreats and Pursuits

(A) RIVER CROSSING

Principles

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

The crossing of rivers always requires preparation and if the river is large, may require extensive preparations. In addition to the technical work required in crossing, rivers generally affect tactical operations to an important extent.

River crossings are inconvenient in that they restrict movements through a few points. An assailant may find his movements after crossing limited by the defenders, or if the river is undefended, the points of passage become vulnerable to interruption of traffic, which may seriously endanger operations.

For a defender, a river is a good obstacle in front, if another position exists to fall back to, that is, provided the defense of the river does not involve a final decision of the campaign. Wagram is an illustration of the latter case, for in this battle Napoleon crossed the Danube successfully, defeated the enemy and ended the campaign and war, as the enemy had no other position to which to retreat.

Most river lines can be turned, and the assailant, who will naturally be superior in numbers, material, or morale, can take advantage of his superiority and find places to turn the defender's front. Nevertheless, preparations are required to accomplish this, and rivers are always an important obstacle.

RIVER CROSSING WHERE NO OPPOSITION EXISTS

Most river crossings in campaign do not involve opposition, either by reason of the fact that the site of the crossing is in rear of the front, or because the enemy has

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abandoned, or fails to offer serious opposition. In the German pursuit of the French after the battles of Woerth and Saarbrucken on August 6, 1870, the French made such a rapid retreat that they failed to destroy existing bridges or to offer opposition to the occupation of sites for new bridges over such important rivers as the Moselle and the Meuse.

In such cases, the crossing of the river is controlled in part by the location and capacity of existing bridges, or the desirability of sites for new bridges, from a tactical viewpoint; and in part by availability technically, a matter with which the engineers are principally concerned. It is desirable to send engineer officers ahead to examine crossings found suitable from map studies, leaving the exact site to be determined as a result of this reconnaissance, which would take into consideration not only the practicability of rapidly constructing a bridge at a point tactically advantageous, but also considers the possibility of finding in the vicinity material to construct a permanent bridge and thereby relieve engineer ponton trains; for it is obvious that it is not advisable to use mobile bridge trains if suitable material for bridges can be found near the bridge site, for a bridge train once installed is naturally unavailable for further operations, and the amount of bridge trains on hand is always limited.

In crossings where little or no opposition exists, when an opportunity presents itself, cavalry can sometimes cross rivers by swimming, and they should do this without waiting for orders.

Rapid Crossings

Occasionally where opposition to river crossings exists, the crossing must be made rapidly, by reason of the tactical situation not permitting of delay. Deliberate preparations cannot here be undertaken. In such cases, time is not generally available for making extended reconnaissance, and where possible, the site for the crossing should be selected from maps, supplemented by as limited a reconnaissance as is practicable within the time available.

Such a reconnaissance should not be with the idea of locating the best possible point for the crossing, but more with the view of locating a good crossing in the vicinity

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of the map-selected site that will satisfactorily solve the tactical situation. In other words, the most favorable point of crossing that can be quickly found should be accepted, without losing time in an effort to find the very best one. This reconnaissance may have to be made by night, but if time and the tactical situation permit it should be made during the daytime. Efforts should be made to determine whether the enemy holds the further bank or not, and if so, in what force and where. It may be possible to send patrols across the river where direct observation does not furnish the necessary information. These patrols may have to be composed of selected men who will swim the river. They should be assisted in doing so by the use of life preservers.

An important consideration in rapid crossings is that the site of the crossing should not be so far distant as to interfere with the mission of the troops which are to cross. If the object of the crossing is to fight a battle, the site should be close enough to the ground on which it is proposed to fight as to enable the troops to reach their place in the line of battle without exhausting marches.

An illustration of a rapid crossing is that of the 5th American Division over the Meuse in November, 1918, which was made at night by rapidly throwing troops across at a point opposite the enemy's lines, which was only lightly guarded. In situations of this kind, the crossing may frequently be done by ferrying troops across, leaving the construction of a bridge to be made at a later time, and probably at a different location.

Turning Crossings

River crossings may be made with a view of turning the enemy's positions. Secrecy as to the real point of crossing is a prime requirement. Rapidity of movement is generally necessary in order to enable the hostile positions to be turned before the enemy can readjust himself to the new condition of affairs. Such movements, therefore, require careful reconnaissance as to the site of the crossing and the completion of the necessary technical means required for effecting the crossing rapidly. Feints to mislead the enemy are often employed, and often with valuable results.

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An example of a turning crossing is that of the Japanese across the Yalu River in 1904. In this case the Japanese made feints south of the point actually crossed, and so far succeeded in deceiving the Russians that the latter concentrated a large part of their troops opposite their right. The crossing was actually made above the Russian left, which was turned and, being weakly defended, resulted in the loss of the Russian position.

Another illustration of a turning crossing is in the Chancellorsville campaign where Hooker's army successfully turned the left of the Confederate forces by a rapid movement across the Rapidan. The failure of the campaign was not due to the river crossing, which was successfully accomplished and did turn the Confederate forces, but to subsequent failure to push advantages so gained.

An example of a double turning crossing is the battle at Sedan in September, 1870. Here the Germans turned the French left by a crossing in force at the little town of Bazeilles, while simultaneously turning the French right by a crossing without opposition made west of Sedan. The result of these operations, as is well known, led to the capture of the entire French army on the same day that these crossings were effected.

Crossings in Force

It will at times be necessary to make a crossing in force without seeking a point which the enemy does not defend. Such cases arise in pursuits or retreats, where time is a prime factor, or when the enemy's front is a continuous line with flanks on impassable obstacles, or too far distant to permit of turning movements.

The crossing of the Beresina by Napoleon in 1812 is an illustration of a forced crossing during a retreat. The crossing of the 5th American Division over the Meuse in November, 1918, is an illustration of a forced crossing in a pursuit. In the first case, Napoleon, finding his retreat blocked by the Russians, seized a crossing to obtain a passage across the Beresina before superior hostile forces could reach him. In the second case, the Americans, having indisputable evidence that the enemy was retreating, forced a crossing to

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obtain important results from a pursuit that was promptly started.

The crossing of the Marne by the Germans in July, 1918, is an illustration of a forced crossing where opposing lines are continuous for great distances. The crossing of the Germans at Bazeilles in 1870 and already referred to was a forced crossing where the tactical situation did not permit the crossing to be made at a more distant point by reason of the time involved.

In forced crossings, secrecy is desirable; preparations should be camouflaged. Dark nights are selected, and the fact that the night will be dark, and possibly rainy or snowy, must be taken into consideration in preparing plans. Time required for preparations and for the passage of troops across the river should be computed and carefully allowed for.

Artillery is freely used to cover the crossing of the infantry, and should be placed far to the front to avoid necessity of moving it forward during the first stages of the battle, leaving to the infantry the use of the crossings during the first stages of the operation. At first a few infantry with machine guns are crossed in boats to a point on the opposite bank which can probably be seized without much opposition. This crossing is made if possible without artillery fire, or no more artillery fire than is normally used in the sector. The point of this crossing need not be at the most favorable point for a bridge. Ordinarily it would not be, as such points would naturally be the ones most carefully guarded. If the infantry can be gotten across at any point and established a safe distance beyond the far bank, a bridge may then be built which at first may be unsuitably located for artillery or trains, but can later be changed to a more desirable site. The prime consideration is to cross rapidly sufficient troops to hold the far bank; and frequently, points that would be ordinarily undesirable for crossing, on account of the lesser opposition met with, may give best results.

The first crossing is on a broad front, made simultaneously. This will give the greatest probability of obtaining a foothold on the far bank. Troops crossing successfully

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should operate to the flanks to enable other troops held up to get over. Once across, the passage of additional infantry should be rushed, with a view of building up an attacking force capable of assaulting the enemy's lines of defense in rear of the river itself.

The point of crossing will depend on tactical consideration and will ordinarily be selected from maps and photographs of the enemy's positions. Careful consideration should be given to the terrain on the far side as to its suitability for an attack. Initial crossings must be at such an hour as will enable complete preparations for the attack to be completed in time, and are usually made in the night in order to obviate hostile interference from a too early discovery of the details of the proposed attack.

The artillery, while used freely to cover the movement, should not commence its fire, or increase that normally employed, sooner than necessary, as secrecy vanishes as soon as the artillery bombardment commences. Care should be taken to have the normal fire of the sector adjusted so that the normal artillery activity will, if possible, be sufficient to cover the initial crossing.

Smoke can be freely used after daylight to conceal the exact points of crossing and the position of attack lines on the far bank. But after daylight, it will not be practicable to conceal entirely the crossings, and the neutralization of the enemy's artillery should be as complete as possible by this time.

Machine guns and ammunition must be crossed early to assist the infantry, and it must be expected that machine guns may have to be moved by hand over considerable distances, for while infantry in large numbers can usually be rapidly crossed by ferrying, bridges are required for vehicles. Bridges when discovered are liable to destruction by the enemy's artillery fire, and may be destroyed by ice or driftwood, as in the case of the battle of Aspern, where, as is well known, Napoleon lost the battle by reason of his bridges across the Danube being destroyed by logs and rafts floated downstream by the Austrians.

If the river is not too wide, pack animals may be swum across, and be of great value in handling ammunition; ma-

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chine guns, pack or mountain artillery may be ferried and swum across. To cross animals by swimming may require preparation of banks; the necessary troops to do this work must be provided, plans prepared as to hours and points of crossing and disposition of the animals and their loads upon arrival at the far bank, as by daylight no accumulation of troops should be visible to the enemy at any point.

The success of a forced crossing depends not only upon initially crossing a considerable force of troops, but upon their ability to seize promptly a bridgehead of sufficient size that will prevent interference with bridges, and enable the assailant to deploy his troops for future operations. Plans for the attack required to accomplish this mission should be prepared in full in advance, and the use of long range artillery employed to enable the bridgehead to be pushed as far to the front as possible without depending upon the crossing of artillery. In general, the assailant cannot count upon crossing of artillery or trains on bridges on the first day of an attack against prepared positions, for the building of the bridge will itself require time, and at daylight is liable to be in view of hostile observation posts, balloons and airplanes, and within range of the artillery, which the enemy is likely to keep to the very last by having some batteries capable of firing on the river itself. As soon as a bridge is discovered, its destruction by the hostile artillery must be expected, although favorable circumstances, fogs, mists, or the free use of smoke may delay or avoid such a loss. Artillery crossing during the first night on bridges can seldom gain sufficient ground to the front to avoid its concealment and destruction by the enemy, and attempts to cross should be limited.

Precaution against counter-attacks on the flanks should be taken in seizing a bridgehead and for covering the bridge sites, as the enemy is liable to defend himself by launching attacks against the flanks of the assailant after he has progressed some distance beyond the far bank. Machine guns and artillery on the assailant's side of the river will often be sufficient to provide against such counter-attacks, and their emplacement should be provided for in the plans for crossing.

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At times the superiority of the assailant may be such that secrecy in crossing a river is unnecessary. In such cases the crossing is made boldly, the assailant availing himself of his superiority in men, material, or morale. Fredericksburg is an illustration of such a crossing, which was made in daylight, under protection of an artillery bombardment. In this case the crossing was successfully carried out, but the troops, after crossing, were unable to develop a bridgehead from which further operations could be undertaken. In 1870, opposite Bazeilles, near Sedan, the Prussians forced a crossing in daytime by reason of their superior strength. Boldly moving their troops forward and attacking, they developed a bridgehead and secured decisive results.

Defense of River Lines

The defense of river lines may be divided into three classes:

(a) Indirect defense.
(b) Defense at the river edge.
(c) Defense at positions back of the river.

Indirect defense is accomplished by counter-attacks on the assailant's side of the river, launched from forts, or field armies. The attack by Marshal Foch on July 18, 1918, near Soissons on the right of the German forces crossing the Marne was an indirect defense of a river line. It is the most effective method of defense if forces are available in sufficient strength to push the counter-attack.

The defense at the river edge, as its name implies, consists in holding and defending the river bank itself or the territory very close to it, with a view of preventing the enemy from making any crossing. Such a method of defense requires large forces, as obviously the entire river has to be defended. It often leads to dispersion and consequent weakness at all points. The first battle of Bull Run is an illustration of the defense of a river line by attempting to hold a long section of the river. As a result the Confederates were weak at all points, and failed to cover the very points where the crossings were actually made. Where the river is but an element of a long defense line, as occurred in France in the World War, it may be practicable to de-

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fend with sufficient forces the entire river front. An example of such a defense is that of the 3d American Division at the Marne in July, 1918, where an effort was made to hold the river bank itself.

In such cases, the defender's troops should be so disposed as to bring effective and destructive fire not only upon the points of crossing but upon the points of assembly on the assailant's side of the river. A study of where these places are likely to be must be made, and arrangements prepared to concentrate artillery and machine gun fire upon such places as soon as there is evidence that the enemy is crossing, or preparing to cross. The artillery fire of the 3d Division at the Marne on the German assembly points north of that river on July 15, 1918, was effective in interfering with the crossing, and in some places caused such losses that there was no crossing.

In addition to concentrations of fire upon likely points held by the enemy, barrages should cover those points in the river where the enemy is likely to cross. Consideration should be given to the fact, as noted above, that the enemy will not probably attempt to make his initial crossing at those points which are naturally the easiest, but is more likely to attempt to cross at points where more or less difficulty exists in order to avoid opposition. Barrages should consequently be arranged to cover the entire front, and if the amount of artillery available is, as would ordinarily be the case for defenders, insufficient to cover the entire front at one time, a system of signals should be prepared by which barrages can be placed without delay upon any sector where hostile crossings are discovered.

The weakness of the defense in holding a section of river line is usually in inability to concentrate reserves in time when the river line has been pierced. This occurred both at Bull Run in 1861 and at the Marne in 1918.

A defense back of the river line itself consists in placing troops, either in positions of readiness, or in a second line, so far removed from the river as to place them beyond effective range of the artillery of the assailant.

In the first case, the defender's troops should be held at points from which good roads lead to the probable points of crossing.

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This method of defense concedes surrendering to the enemy a certain amount of territory on the defender's side of the river, usually because the defender is not in sufficient strength to defend the river. From such positions of readiness, the defender may concentrate sufficient troops against hostile troops crossing, to drive them back before they can effect a permanent lodgment on the defender's side of the river.

Where the defense back of the river consists of a continuous line, this line is so located as to be beyond the ability of the enemy to attack it seriously by its artillery, without crossing it over. The enemy once across may be counter-attacked at a suitable opportunity, or the line may be held without counter-attack, in which case it will be an element in a step by step defensive. The French divisions on the south side of the Marne in July, 1918, defended the river line by a position about 6 miles south of the river, abandoning after slight defense the river bank itself to the attacking Germans. This method of defense was sufficient to prevent a further German advance before the counter-attack of Marshal Foch was delivered on July 18th, the Germans not being able in the short time that existed to transfer sufficient artillery to the south bank of the river to attack seriously the prepared French lines of defense.

In very large streams, gunboats or other armored vessels may be used to assist in preventing crossings. The German crossing of the Danube near Belgrade in October, 1915, was opposed by Russian monitors in the river, but while influencing the operations, their use on this occasion was unsuccessful, due to the powerful artillery support of the Germans.

Information concerning the dispositions and intentions of the assailant are of the utmost importance to enable the defense of a river line to be properly conducted. Patrols must be sent across the river constantly to make identifications and secure details as to the occupation of the enemy's lines. Aerial reconnaissances must be freely used to supplement the patrols.

Under favorable circumstances, it may be practicable to determine in advance the point, and probably the date,

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the attempt to cross will be made. The greatest danger to the defender is that the assailant will successfully conceal his preparations until too late to arrange to repulse the crossing.

Secondary only to the service of information, good roads are needed by the defenders to enable rapid concentration of infantry and artillery against points of crossing. Lines of communication are of the greatest use and when time permits should be buried to prevent interruption by enemy artillery.

Technique, as Affecting Tactical Conditions

When river crossings are contemplated, the advice of an engineer officer should be obtained. Arrangements should be made for the collection of the material required for bridges or ferries. This may come from the bridge trains, or from material found on the ground or especially provided for. Reconnaissances, where necessary, should be made to locate available material.

Crossing tables for ferries or bridges should be prepared, whether the crossing is against opposition or without opposition. Provision must be made when opposition exists for bringing the troops to the point of crossing without subjecting them to severe losses if caught by hostile artillery or machine gun barrages. Careful regulations for control of traffic to and from points of crossing must be published and understood.

Consideration should be given to the relative ease of crossing by night or by day. At night-time, while concealment is better secured, there is difficulty in distinguishing troops and in determining the situation. Means must be provided for locating troops crossing during the night and obtaining accurate information as to conditions. Telephone or buzzer lines may readily be established over even very wide rivers with ordinary twisted wire, sunk on the river bed by small stones attached to it. Numerous such lines should be provided. It will be better during operations to have information officers charged solely with the use of sending in direct information over such lines.

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Points of crossing should have several approaches to them to avoid the possibility of a single approach being destroyed, or its use interrupted by hostile fire.

When troops are ferried across stream, if the current is swift, the boats may drift downstream with each trip or require an excessive time to return to the original starting point. In this case, it may be advisable to have successive points of crossing located at proper distances apart, the ones upstream being used first.

Protection must also be provided against interruption of means of crossing through use of obstacles drifted down stream, including floating mines. The latter may be most effective and might endanger the success of a crossing if used in numbers.

Power boats are of great use in ferrying troops across rivers, but are seldom obtainable, nor can they be safely used on account of the noise made in initial stages when the enemy is close to the front.

Bends in rivers may affect river crossings in an important manner, as they afford an opportunity to one side or the other to flank the territory enclosed within the bend. When the bends form a salient toward the defender's side, the latter may oppose the occupation of the territory within the bend, as well as a further advance beyond this territory. When the bend forms a salient toward the assailant's side, it gives the assailant an opportunity to facilitate his crossing by placing machine guns or artillery at suitable points to flank with fire the initial advance of the first troops crossing, and secure the territory within the bend. Size of bends, and whether the territory within it dominates the opposite bank, or whether the reverse condition exists, will determine the method of attacking or defending it.

CONCLUSION

Military history shows that river crossings have generally been successful. But this fact should not mislead students to believe that river crossings are simple operations. On the contrary, they are usually complex, and require elaborate operation programs to secure decisive results. It is because time, material, and study have generally been given

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to such operations that they have been successful. It would be wrong to attempt river crossings without a study of the subject. Military history is full of examples of failures due to lack of either preparation or methods to accomplish the results desired.

A River Crossing—Offensive

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

Maps: Kansas-Missouri Geological Survey Map, 1:62500, Leavenworth and Vicinity.

General Situation:

In February, 1920, the Missouri River divides two strong hostile states, Blue west, Red east. For some time, each nation has held its own side of the river with large forces. Bridges across the river have been destroyed. Stigers Island is held by the Blues.

Special Situation:

The 1st Blue Corps holds the line Wade (349—753, inclusive) to the National Military Home (352—741, inclusive). The divisions of the corps are located as follows:

4th Division from Wade (inclusive) to Fort Leavenworth station; 3d Division from Fort Leavenworth station to north edge of Leavenworth; 1st Division from Leavenworth (inclusive) to opposite Slabtown Slough; 2d Division from Slabtown Slough to National Military Home (inclusive); 5th Division in reserve near Frenchmans; and 6th Division in reserve near Glen Valley School.

In accordance with instructions from army headquarters, the 1st Corps has prepared to force a crossing of the Missouri River opposite Leavenworth.

For this purpose the army artillery has been strengthened greatly by railroad and tractor artillery from the general reserve, and bridge materials have been accumulated. Preparations have been camouflaged carefully. New batteries have not fired, and ammunition and other dumps required have been prepared secretly.

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In compliance with instructions received, the 1st Corps issued the following order:

1st Corps,
HUND, KANSAS,
5 February 20, 10:00 AM.

FIELD ORDERS }
No 10 }

Maps: 1:62500, Leavenworth and Vicinity.

1. The 1st Red Corps continues to hold the MISSOURI RIVER line opposite our front, with its 1st Division from PLATTE RIVER, near FARLEY, to east and west road through ELDORADO SCHOOL; 2d Division, thence north to BEE CREEK; and 3d Division north to WESTON (exclusive).

The enemy's first position runs along the heights just east of the C. B. & Q. R. R. A second position exists from FARLEY along the high ground through ELDORADO SCHOOL—HACKBERRY SCHOOL; and a third position is on the heights east of the PLATTE RIVER.

No other hostile positions in rear are known, and no divisions are known to be in reserve. The enemy's artillery appears normal in quantity.

2. This corps, after dark on D minus 1 day, crosses infantry over the MISSOURI RIVER, seizing bridgeheads opposite the corps front; and from these bridgeheads attacks at H hour on D day and seizes all three hostile positions.

Zone of Action:

Right (south) Boundary: FARLEY—LANTER SCHOOL—B.M. 1002 (all inclusive).

Left (north) Boundary: BEVERLY STATION—HACKBERRY SCHOOL—RJ 994.

Lines of Departure:

a. North and south road at north end of DUCK LAKE.

b. South end DUCK LAKE—BUXTON—RJ 19—30.

The 2d Corps on our right and the 3d Corps on our left make demonstrations on D day, and assist with artillery fire.

3. (a) The 1st Division, at 8:00 PM on D minus 1 day, will cross in boats a force to seize a working space and construct a bridge opposite LEAVENWORTH; and during the night of D minus 1 and D day will establish its infantry south of DUCK LAKE on the general line BUXTON—RJ 19. At H hour on D day it will assault the enemy's first line and subsequently will carry this attack through the enemy's second and third positions.

Zone of Action:

North Boundary: East and west road through ELDORADO SCHOOL—MORTON SCHOOL (inclusive).

South Boundary: Co-ordinate 745—PRAIRIE CREEK—BIG CREEK.

The artillery and one regiment of infantry of the 5th Division are attached to the 1st Division.

(b) The 2d Division, at 8:00 AM on D minus 1 day, will cross in boats a force to seize a working space and construct a bridge south of SLABTOWN SLOUGH; and during the night of D minus 1 and D day will establish its infantry on the general line BUXTON—RJ 19, on the south of the 1st Division. At H hour on D day it will assault the enemy's first position and subsequently will carry this attack through the enemy's second and

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third positions. It will hold strongly the high ground near FARLEY and LANTER SCHOOL against possible counter-attacks.

Zone of Action:

North Boundary: Co-ordinate 745—PRAIRIE CREEK—BIG CREEK.

South Boundary: FARLEY—LANTER SCHOOL—B.M. 1002.

The artillery and one regiment of infantry of the 6th Division are attached to the 2d Division.

(c) The 3d Division, at 8:00 PM on D minus 1 day, will cross in boats a force to seize a working space and construct a bridge opposite FORT LEAVENWORTH; and during the night of D minus 1 day and D day will establish its infantry on the general line north and south road near the north edge of DUCK LAKE. At H hour on D day it will assault the enemy's first position, and subsequently will carry this attack through the enemy's second and third positions. It will hold strongly the high ground north of BEVERLY STATION and the northwest and southeast ridge through HACKBERRY SCHOOL.

Zone of Action:

North Boundary: Hill at 30, north of BEVERLY STATION —HACKBERRY SCHOOL—RJ 994.

South Boundary: RJ 968—RJ 840—MORTON SCHOOL (exclusive).

(d) The 4th Division will make strong demonstrations opposite bend in river south of WESTON on the night of D minus 1 and D day, and will make raids by boats in its sector. It will neutralize by artillery fire the heights north of BEE CREEK and the C. R. I. & P. R. R., on the left of the 3d Division. It will prepare to cross the MISSOURI RIVER upon orders from these headquarters.

(e) The 5th Division will remain in readiness to cross the MISSOURI RIVER in rear of the 1st Division upon orders from these headquarters. The artillery and one regiment of infantry of this division are attached to the 1st Division until further orders.

(f) The 6th Division will remain in readiness at its present station to cross the MISSOURI RIVER in rear of the 2d Division upon orders from these headquarters. The artillery and one regiment of infantry of this division are attached to the 2d Division.

(g) The artillery of the corps will participate in a bombardment of the hostile positions beginning at H minus 6 hours, and in a deep barrage preceding the infantry advance, in accordance with the plan prepared by the army chief of artillery. The barrage will advance at the rate of 25 yards a minute, halting for 30 minutes after the capture of each of the hostile first and second positions. When the barrage reaches the hostile positions east of the PLATTE RIVER, it will rest on them until division commanders report that their infantry is ready to assault; the advance will then be resumed at the rate of 20 yards a minute.

4. Administration: See Orders No 10.

5. (a) Plan of Signal Communications: No change.

(b) Axes of Signal Communications.

1st Corps: GLEN VALLEY SCHOOL—LEAVENWORTH—ELDORADO SCHOOL—MORTON SCHOOL.

1st Division: Same as corps.

2d Division: RICHARDSON—FARLEY—LANTER SCHOOL.

3d Division: FORT LEAVENWORTH—BEVERLY STATION—road 840—901—886.

4th, 5th and 6th Divisions: No change.

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(c) Command posts:
1st Corps: GLEN VALLEY SCHOOL.
1st Division: LEAVENWORTH.
2d Division: BAIN CITY.
3d Division: FORT LEAVENWORTH.
4th, 5th and 6th Divisions: No change.

YZ,
Major General.

Official
G T
Asst C of S G3.

Major General A, commanding 1st Division, in addition to receiving the foregoing order, was informed confidentially:

(a) That D day would be the first dark night after the night of February 10-11.
(b) That H hour would be about 7:15 AM.
(c) That each of the three attacking divisions would receive enough heavy ponton material to construct one bridge across the Missouri River, with 20 per cent additional material for each bridge; one-half of the extra material to be held in reserve by the corps, and the other half delivered to the division.
(d) That each division would receive also 100 extra ponton boats for use in ferrying troops across the Missouri River.
(e) That sufficient light ponton material would be furnished each attacking division to construct two bridges across the Platte River.
(f) That, under favorable circumstances, six hours would be required to construct the bridges across the Missouri, with necessary approaches thereto, provided the engineers could work on both sides of the river.
(g) That the 5th Division units attached to the 1st Division are the 5th Field Artillery Brigade and the 20th Infantry.
(h) That one trench mortar battery would be furnished by the corps to protect the initial crossing of troops across the Missouri River.

DISCUSSION

General A's problem is to cross the Missouri River at the time, place, and with the force fixed by the corps. The details are left to General A.

There is available sufficient material to lay one ponton bridge. The length of time to lay this bridge, at a minimun, will be six hours, assuming that the material can be concealed near the site of construction in Leavenworth, prior to the attempt to cross.

If the enemy discovers the location of this bridge, or floating ice or drift wood delays its construction, it may take more than six hours to complete it and it may not be available for traffic by daylight. After daylight, the enemy can

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hardly fail to find the bridge, and undoubtedly will direct artillery fire upon it, and either destroy it, or so interfere with traffic as to make the bridge unserviceable. This condition is liable to continue as long as the hostile artillery remains in range of the bridge site, which will be until the enemy's position east of the Platte is captured—under most favorable circumstances well along into D day.

It apears therefore that General A cannot count on the use of the bridge with certainty during the night of D minus 1 D day, or on D day itself. But it should be practicable, by using trench mortars, machine guns and artillery after dark of D minus 1 day to drive off any enemy small forces on the river bank, and then cross over in boats a sufficient force to establish a bridgehead on the low ground in front of the enemy's first battle positions, east of the C. B. & Q. R. R. main line. During the night, there is a possibility that the location of the bridge and points of crossing will not be discovered by the enemy for some time, provided the troops crossing first clear a working space on the east bank.

The number of boats furnished in excess of those required for the bridge itself is 100, and these hold 40 men each, or a total of 4000 per trip. Assuming that these boats are hidden in or about buildings in Leavenworth, it will take time to carry them down to the water's edge; but on a dark night it might be practicable to do this without arousing the enemy's suspicion. Crossing on a broad front, say two miles, or the entire division sector, it should be possible under the protection of trench mortars and machine gun barrages to cross a sufficient number of men by means of these boats to enable the east bank of the river to be seized.

It will take some time to move the boats from the point of concealment into the water in such a quiet manner as not to attract the enemy's attention. Slight noises can be drowned by machine guns and artillery fire, approximating the noise normally used for harassing purposes. Harassing programs for several days prior to D day should be such that no departure from the usual firing programs will be necessary during the first crossing of the river.

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The infantry crossing first can be supplemented by additional forces ferried over. On a broad front, the number of boats liable to be lost by fire will be limited to those caught in hostile barrages in the river. It is not likely that the enemy will be able to cover the entire river with barrages throughout the night; and by noting where the barrage falls, the boats should be able to make trips back and forth during the night. If all boats remain available, about a regiment of infantry can be moved across the river in 1½ hours. Allowing for considerable delay, with no bridge, it should be practicable to cross all the infantry with machine guns to the east side of the river in time to form an attacking line in the position and at the hour indicated by the corps commander, but without transportation or artillery. The latter must await completion of the bridge.

The position for the jump-off line should be seized early, and the first troops, after clearing the river bank, should be directed on Aurora School and Buxton. Even on a dark night, these points should be readily indentified as well as the line along the railroad track running northeast and southwest through Buxton which makes a readily recognizable line of departure. It was probably selected for this reason.

If the bridge is finished during the night, combat trains, machine gun transportation, and accompanying artillery can be crossed over. If the bridge is not built successfully, a possibility, the attack must start with only infantry and machine guns across and without animal transportaition.

The initial movement and the deployment of the division along the line of departure is to be protected by artillery bombardments prepared by the army, and with which General A need not concern himself, except to give information which may facilitate preparation of plans.

The division must prepare to make its attack on D day through all of the hostile positions without counting on artillery brought across the river. By the use of the army artillery, strong barrages and concentrations of fire can be placed as desired to the extreme limit of the enemy's last position.

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On the second night, if the attack is successful, it should be practicable to cross artillery and push the attack as developments indicate.

General A therefore issues the following order:

1st Division,
LEAVENWORTH, KANSAS,
6 February 20, 10:00 AM.

FIELD ORDERS
No 20

Maps: 1:62500, Leavenworth and Vicinity.

1. (a) The 1st Red Corps continues to hold the MISSOURI RIVER line opposite our front with its 1st Division from the PLATTE RIVER, near FARLEY, to east and west road through ELDORADO SCHOOL; its 2d Division thence north to BEE CREEK, and its 3d Division north to WESTON (exclusive).
   (b) The enemy's first position is along the heights just east of the C. B. & Q. R. R. A second position exists from FARLEY along the high ground through ELDORADO SCHOOL—HACKBERRY SCHOOL; and a third position is on the heights east of the PLATTE RIVER.
   (c) No other hostile positions in rear are known, and no divisions are known to be in reserve. The enemy's artillery appears normal in quantity.
   (d) Our 1st Corps forces a crossing of the MISSOURI RIVER on D day with the 2d, 1st and 3d Divisions, from south to north, between SOLDIER'S HOME (exclusive) and FORT LEAVENWORTH (inclusive), attacking and seizing all three hostile positions.
   (e) The artillery of the corps will participate in a bombardment of the hostile positions beginning at H minus 6 hours, and in a deep barrage preceding the infantry advance, in accordance with the plan prepared by the army chief of artillery. The barrage will halt for 30 minutes after the capture of each of the hostile first and second positions. When it reaches the hostile positions east of the PLATTE RIVER, it will rest on them until division commanders report that their infantry is ready to assault.
2. (a) This division, with 20th Infantry and 5th Field Artillery attached, crosses infantry over the MISSOURI RIVER at LEAVENWORTH at 8:00 PM on D minus 1 day, seizing a bridgehead; and attacks at H hour on D day from this bridgehead, to penetrate the Red third position.
   (b) Zone of Action:
   North Boundary: East and west road through ELDORADO SCHOOL—MORTON SCHOOL (both inclusive).
   South Boundary: Co-ordinate 745—PRAIRIE CREEK—BIG CREEK.
   (c) Line of Departure (in bridgehead): South end DUCK LAKE—BUXTON—point 353.9—745.0.
   (d) Rate of Advance: 25 yards a minute to the PLATTE RIVER; afterwards 20 yards a minute.
3. (a) The 5th Field Artillery Brigade supports the 1st Brigade, and the 1st Field Artillery Brigade the 2d Brigade. They will participate in the bombardment of the hostile positions and in the barrage. Upon completion of the bridge across the MISSOURI RIVER, one battalion from each of the 1st and 2d Light Artillery will be advanced as infantry batteries and accompanying guns for the 1st and 2d Brigades respectively. General FA will command the division artillery.

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(b) The 1st Engineers will detail a battalion to man 100 boats furnished by the corps, which will be placed secretly in the MISSOURI RIVER by 8:00 PM on D minus 1 day. They will then ferry troops as in paragraphs c, d, e and f following.

The 1st Engineers (less 1 battalion), on the night of D minus 1 and D day, will construct a ponton bridge with necessary approaches across the MISSOURI RIVER 400 yards south of the destroyed TERMINAL BRIDGE, as soon as the bridgehead is established as directed in paragraph 3 (c). This bridge must be finished at the earliest moment and be suitable for trains.

The 1st Engineers, upon completion of ponton bridge, will cross at once light ponton material to enable two bridges to be thrown across the PLATTE RIVER, as directed in paragraph 3 (x) (1).

(c) The 20th Infantry will be assembled at dark on D minus 1 day on the east edge of LEAVENWORTH, prepared to cross in boats on a broad front.

Upon crossing, the east bank of the river will be cleared of hostile forces, and the territory between SLABTOWN SLOUGH and DUCK LAKE to include the line of departure through BUXTON seized at the earliest possible hour.

A trench mortar battery, furnished by the corps, will be attached to the 20th Infantry.

The 20th Infantry will cover the crossing and deployment of the 1st and 2d Brigades as directed in paragraphs 3 (d) and 3 (e); and then will assemble near STILLINGS as division reserve in position of readiness until further orders.

(d) The 1st Brigade will cross the MISSOURI RIVER north of the destroyed TERMINAL BRIDGE immediately after the bridgehead has been established. It will be ferried across the river, as directed in paragraph 3 (b). It will attack the enemy's first, second and third positions at H hour, starting from the line of departure through BUXTON.

Zone of Advance:

North Boundary: C. B. & Q. R. R. near point 354.6—747.3—east and west road through ELDORADO SCHOOL—MORTON SCHOOL, inclusive.

South Boundary: Road crossing of C. B. & Q. R. R., 400 yards northeast of BUXTON—RJ at point 356.6—746.7—road corner at point 362.3—746.8—RJ at point 362.8—746.8.

(e) The 2d Brigade will cross the MISSOURI RIVER south of the destroyed TERMINAL BRIDGE immediately after a bridgehead has been established. It will be ferried across the river as directed in par 3 (b). It will attack the enemy's first, second, and third positions at H hour, starting from the line of departure through BUXTON.

Zone of Advance:

North Boundary: Same as south boundary, 1st Brigade.

South Boundary: R. R. junction 1,400 yards southwest of BUXTON—co-ordinate 745 to PRAIRIE CREEK—PRAIRIE CREEK—BEE CREEK.

(f) The 1st Machine Gun Battalion will cross the MISSOURI RIVER by bridge, if available, immediately after the engineer material, directed in 3 (b), otherwise by boat; and will join the division reserve near STILLINGS.

(g) The 1st Observation Squadron will observe constantly the division zone, and one mile to each flank.

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(x) (1) Brigades will halt 30 minutes after the capture of each of the enemy's first and second positions, and then will push without halt to the PLATTE RIVER. They then will prepare to cross the PLATTE. During this time, a standing barrage will be placed on the enemy's positions east of the PLATTE. Upon direction from the division commander, brigades will cross the PLATTE and seize the enemy's third postion. The 1st Engineers will construct two bridges over the PLATTE one each for the 1st and 2d Brigades at points to be selected by the brigade commander.

(2) The 1st and 2d Brigades must be prepared to carry all three enemy positions without depending upon animal or motor transportation or accompanying artillery crossing the MISSOURI RIVER on D day. Arrangements will be made for transporting machine guns by hand. The artillery preparation will be thorough to cover the possible necessity of infantry attacking with limited transportation facilities.

(3) Upon completion of the bridge over the MISSOURI RIVER, priority of crossing will be as follows:

1. Engineer material for crossing the PLATTE RIVER.
2. Division Machine Gun Battalion.
3. Machine gun transportation and combat trains, 1st Brigade.
4. Machine gun transportation and combat trains, 2d Brigade.
5. Artillery: Infantry batteries and accompanying guns.

Order of crossing for succeeding units will be announced later. See Administrative Orders and Map for routes of approach to bridge.

4. See Administrative Order No. 20.
Station for slightly wounded: near east end TERMINAL BRIDGE.

5. (a) Plan of Signal Communications: No change.
(b) Axes of Signal Communications:
1st Division and Field Artillery Brigades: LEAVENWORTH—ELDORADO SCHOOL—MORTON SCHOOL.
1st Brigade: Same as division.
2d Brigade: LEAVENWORTH—EAST LEAVENWORTH—RJ 900 yards south of MARTIN SCHOOL.
(c) Command posts:
1st Division: LEAVENWORTH.
Division Artillery: LEAVENWORTH.
1st Brigade: LEAVENWORTH, to be moved promptly to STILLINGS, vicinity of ELDORADO SCHOOL, and MORTON SCHOOL.
2d Brigade: LEAVENWORTH, to be moved promptly to STILLINGS, EAST LEAVENWORTH, bridge at 758—east and west road 900 yards south of MARTIN SCHOOL, or vicinity of these places.

A,
Major General.

Official:
GH—Asst C of S G3.
Distribution:
(Omitted.)

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A River Crossing—Defensive

CAPTAIN WALTER C. SHORT,
Infantry

Maps: Pennsylvania and Maryland Geological Survey Map, 1:62500, Emmitsburg and Taneytown Quadrangles.

General Situation:

Pennsylvania (Red) and Maryland (Blue) are at war.

A Red army invading Maryland has driven the Blue forces back on the line of Big Pipe Creek. On October 1, 1919, the 1st Blue Army is holding the line of the Big Pipe Creek from Union Mills (370—730) to Fues Mill (354—724). The 1st Blue army is based on Westminster (372—720). The Monocacy south of Double Pipe Creek is fordable only where shown on the map.

Special Situation (Blue):

The 1st Blue Division in army reserve is along the railroad from Ladiesburg (342—719) to Woodsboro (343—714). The 1st Brigade is in the vicinity of Ladiesburg, the 2d Brigade in the vicinity of Le Gore, and all other elements of the division are in the general vicinity of Woodsboro.

At 10:00 PM, October 1, 1919, General A, commanding the 1st Division, received the following message:

1st Blue Army,
WESTMINSTER,
1 Oct 19, 9:45 PM.

Commanding General,
1st Division:

All indications point to an early Red attack. Have reliable information that the 7th Red Corps, consisting of 13th and 14th Divisions, reached HIGHFIELD (326—736) and CAVETOWN (7 miles east of HAGERSTOWN) today and will continue advance toward THURMONT tomorrow. You will prevent enemy crossing MONOCACY south of DOUBLE PIPE CREEK and north of CHESTNUT HILL. You will observe MONOCACY south of CHESTNUT HILL until 6:00 PM, Oct 3, 19, when other troops will take over defense of that part of the line. 1st Light Tank Battalion and 1st Cavalry will report to you at WOODSBORO at 5:00 AM, October 2, 19.

X,
General.

Required:

General A's estimate of the situation.

Orders actually issued by General A.

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General A's Mission

General A's mission is to prevent the enemy from crossing the Monocacy at any point south of Double Pipe Creek. His mission is purely a defensive one. It will become offensive only in case the enemy succeeds in crossing the Monocacy, in which case it will be necessary for General A to take the offensive to drive the enemy back across the river. Should the enemy cross the Monocacy north of Double Pipe Creek, General A, under his present orders, is not called upon to oppose him.

General A can form no definite idea as to the length of time he will have to hold the enemy west of the Monocacy, but in all probability until the completion of the expected attack of the Red army. This may mean a period of several days.

From Double Pipe Creek to Chestnut Hill is about 6½ miles. This is an unusually great front to assign to a division but there are several reasons that may have influenced the army commander in making this assignment. The Monocacy is a considerable obstacle which makes it possible for the division to defend a greater front. All of the bridges and fords which the enemy can use to advantage are in this section of the river, and General X may have wished to concentrate the defense of these under a single commander. Chestnut Hill commands all of the ground as far north as Double Pipe Creek, and its possession is essential to the unit assigned to defend the sector. General X is expecting an early attack by the Red army and does not wish to detach more than a division to defend this sector of the river, since his information indicates that not to exceed two Red divisions will be employed in that direction.

The Enemy

The enemy's strength is known to be a corps of two divisions or approximately double the strength of General A's command. The enemy is camped tonight in the vicinity of Highfield and Cavetown, which are approximately 15 miles from the Monocacy. Each of the enemy's columns has two roads available for the march the next day, although slight detours will be necessary for part of the troops. It will be possible for the enemy to reach the Mono-

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cacy in force by nightfall of October 2d. That the enemy will attempt to cross the Monocacy east and southeast of Thurmont appears almost certain. This Red corps in all probability has been sent to strike the Blue army in the flank at the same time that the Red army attacks it in front. The direction of the march indicates that the Red corps is not marching simply to reinforce the Red army, for in that case it would have taken a route farther to the north where it could cross the Monocacy without danger from the Blue forces.

To act effectively against the flank of the Blue army, the Red corps must cross the Monocacy south of Double Pipe Creek. If it should cross north of Double Pipe Creek, it would have very little room for deployment between Little Pipe Creek and Big Pipe Creek and would be in danger of being driven back in the angle between the two creeks, which probably would prove disastrous for it. The Reds probably will attempt a crossing somewhere between Double Pipe Creek and Myers Ford, although they might make use of the bridge southwest of Continental School. To go farther to the south would not only delay seriously the advance of the Red corps but would separate it from the Red army so that it might be cut off and destroyed.

The river can be forded only at the indicated points. If the bridges are destroyed, the enemy will have the choice of forcing a crossing at one of the two fords, Stulls or Myers, or crossing enough men in boats to form a bridgehead to cover the building of a bridge. The Reds undoubtedly will have sufficient pontons to build a bridge.

The Reds are so superior in every way that they may attempt to force a crossing. They have sufficient artillery to make an attempt at several points at one time, or to feint at several points and drive forward in force at only one point. There are several wooded stretches of the river that favor a crossing in boats by surprise and this also will have to be guarded against.

The most favorable points for the enemy to force a crossing are:

The bend south of Millers Bridge.
Stull's Ford.
The bend south of the Creagerstown—Woodsboro road.
Myers Ford.

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All of these bends give the enemy an opportunity to concentrate artillery and machine guns so as to enfilade the lines defending these points. These salients are the natural points of attack since the lines of defense will have to be drawn back to the base of the salient. The bend south of Millers Bridge offers the most favorable place for gaining a decided fire superiority. A force crossing at this point also would have its left flank protected by Double Pipe Creek, but its ability to maneuver would be limited by the creek. Stull's Ford and the bend south of the Creagerstown—Woodsboro road are favorable for crossing and, once across, the ability to maneuver would not be limited. Stull's Ford is the most favorable to the enemy since he can make use of the ford and throw his troops across much more quickly. The woods to both the north and south of the ford afford excellent cover for forming up. Myers Ford does not offer the same advantages as the other places. The possibility of concentration of fire are not as good. As soon as the troops were across they at once would come under a flanking fire from Chestnut Hill.

General A's Own Forces

General A has his division complete, and in addition, a regiment of cavalry and a battalion of tanks. While his force is only about half that of the enemy, the river is a serious obstacle and adds greatly to his strength. He has cavalry which should enable him to learn early the enemy's intentions. The battalion of tanks is a powerful force for counter-attacks. It is highly improbable that he will be able absolutely to prevent the enemy from crossing the river at any point, but the battalion of tanks should be of great assistance in driving the enemy back across the river.

General A can expect no assistance from the army. The pending attack of the Red army will require all of the Blue forces to meet it. The Blue commander probably would detach forces to come to the assistance of General A only if the advance of the Red corps greatly imperilled the Blue army.

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PLANS OF ACTION

The following plans of action are open to General A:

1. He may advance to the vicinity of Thurmont and attempt to block the mountain passes to the north and south of Thurmont.
2. He may establish a bridgehead on the west bank of the Monocacy.
3. He may establish a cordon-like barrier on the east side of the river, posting his main forces at the river itself.
4. He may post weak forces at the east bank of the river, for observation and for warding off or delaying the crossing of troops, holding the bulk of his forces in reserve at points in the rear.

Plan No. 1 offers almost no chance of success. The enemy is nearer to the mountain passes than General A, and probably would have early information of General A's advance unless General A seized the passes tonight. Very early tomorrow morning the enemy undoubtedly will have posts observing all of the country from the mountains to the Monocacy. Should General A succeed in getting possession of the eastern exits of the passes, the enemy with his superior forces could engage General A at all the passes held and then turn him by debouching at a point further to the north or south. General A then would be in serious danger of having his command destroyed.

Plan No. 2 has little to recommend it. General A has time to occupy a bridgehead on the west side of the river and by so doing could delay the enemy for a short time. With the river at his back, however, he would be in grave danger; and when he did have to retire to the east bank, he would be forced to occupy a position hurriedly. He probably would lose a considerable number of men in crossing, since the Monocacy is not fordable and could be crossed only at the bridges or fords or by boats. If he occupied both banks at once, holding the west bank in the nature of an advanced position, he would be running the same risk.

Plan No. 3.—Making the main defense at the river line itself is practicable under certain conditions. Where the river is wide the assailant will be under the fire of the defender for a considerable time while actually crossing the stream. This is greatly in favor of a defense that is made at the river bank.

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For a defense of this character the flanks of the defending force must be secure; otherwise the assailant can turn the defender's flank and roll up his line. The flanks may be protected either by natural obstacles or by friendly troops.

Field entrenchments add very greatly to this form of defense, since relatively weak forces can make a very stubborn defense where they have had time to organize thoroughly the ground, as in a stabilized sector. The whole key to this form of defense is not to permit the assailant to penetrate the line, since the reserves in rear may not be sufficient to expel an enemy who has crossed in any considerable force. There would be reserves distributed in depth; but since the theory of this defense is not to permit the enemy to penetrate the position, they would be distributed rather equally throughout the sector and would be used for local reinforcements rather than for making strong counter-attacks.

This type of defense is wholly passive in character and is most appropriate where the line has to be held for quite a limited length of time. The enemy can be delayed by such a defense, but in time he will break it at some point and then the whole defense is gone.

This type is best suited to holding a narrow front. Under such conditions the defense could be made relatively strong at all points and the chances of holding the line greatly increased. In this case the actual length of the river line between Double Pipe Creek and the bridge southwest of Continental School is about 10 miles and in a straight line about $6\frac{1}{2}$ miles, a front too great to be held strongly throughout by a division.

The great development of artillery and machine gun fire enables the defender to concentrate his fire and put up very effective barriers in the form of barrages at the point at which the assailant is attempting to cross. On the other hand, this same development enables the assailant, if superior in these weapons, to concentrate so much fire at a single point as practically to overcome resistance and guarantee his crossing. If then there is not a sufficient counter-attacking force to expel him, his mission almost certainly will be accomplished.

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In the present case the river is narrow, the frontage is great, the south flank is exposed, time is not available to prepare elaborate defenses, and the position probably will have to be held for several days. None of the conditions which make for the success of the cordon type of defense are present, and it should not be employed.

Plan No. 4.—All of the conditions which make the success of plans Nos. 1, 2 and 3 appear improbable favor the adoption of Plan No. 4.

In this form of defense the river line should be held thinly but continuously. This will prevent the enemy from crossing by surprise or from crossing at several points with weak detachments. If this thin line is well reinforced by machine guns, it should prevent all but forced crossings supported by artillery and machine gun fire, and should delay forced crossings so that the reserves will have time to counter-attack before the enemy is firmly established.

Strong infantry reserves should be held in such positions in the rear as are most favorable for delivering counter-attacks against the most probable points of crossing. Good communications are important in the location of reserves. It is essential that the reserves be placed at such points that good roads will be available for moving them quickly to any threatened point. All roads leading to the front should be reconnoitered and marked. Guides should be designated for all roads and required to become thoroughly familiar with them both by day and by night.

The outposts should be strong in machine guns, which should use the maximum amount of enfilade fire on the river and west bank. There also should be a considerable number of guns in reserve, with positions prepared, opposite the most probable places of crossing, for the purpose of limiting the penetration and supporting the counter-attacks. All guns not too far to the rear should be given a barrage mission in front of the outposts.

The artillery should be posted so as to be able to place a barrage in front of all parts of the river line, paying particular attention to the most probable places of crossing. Where the banks are steep, the howitzers will have to be used. Some guns should be posted far enough forward to

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take under fire all important crossroads east of a line through Jimtown—Graceham.

The cavalry should be used on the west bank of the river to delay the enemy and obtain early information of his strength, movements, dispositions, and intentions. When forced to retire, the bulk of the cavalry should be transferred to the left flank to guard the crossings south of Continental School and obtain early information of any turning movement to the south. There will be little opportunity for the use of cavalry on the right flank. One troop should be sufficient on that flank.

The bulk of the tanks should be held well to the rear in favorable positions for counter-attacking the enemy at the most probable crossing places. One company of tanks should be kept in division reserve, and the other two assigned to the brigades. With the number of crossings available to the enemy, it might be well for the brigades to assign a platoon of tanks to each regimental reserve.

The engineers should be given the following missions:

1. They should assist in the organization of the ground.
2. They should collect or destroy all boats, furnishing crews for all boats to be employed in the defense. They should man all ferries that are to be continued in operation.
3. Where it is practicable, they should make provisions for destroying any bridges built by the enemy. This may be done by floating heavy rafts or heavily laden boats against the bridges.
4. They should prepare all bridges for demolition and be made responsible for their demolition at the proper time.

It would be a serious mistake to destroy all bridges at once, since it would interfere greatly with proper reconnaissance. They should be prepared for destruction and held by small groups of infantry on the far side of the stream. These groups would serve as bases for sending out patrols and maintaining an effective infantry reconnaissance for a short distance to the front.

The first mission of the observation squadron will be to obtain information of the enemy's movements and intentions, the second to harass the enemy at all points where he is attempting to cross the river.

The first essential for the successful defense of a long river line is a complete and thorough system of communication. As far as time will permit, the system of signal

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communications should be developed and protected as in a stabilized sector. Without good communication, large reserves are likely to be of little value.

General A is very close to the position he will occupy, while the enemy cannot reach it in force until late in the afternoon of the following day. To attempt to move the troops into position tonight would disturb their rest and probably would result in considerable confusion. By starting at daylight tomorrow morning there will be sufficient time for a proper occupation of the position before the enemy possibly can reach it.

THE DECISION

General A decides to take up a defensive position on the east bank from Double Pipe Creek to the hill 300 yards south of Continental School; to hold the river lightly and keep the greater part of his forces in reserve well in rear; to push his cavalry well to the front with instructions to withdraw to the left flank and south of Myers Ford when forced to retire; to start moving his troops into position at 6:00 AM.

THE ORDERS

Upon receipt of the message from the army commander, General A sent a warning message by telephone to all troops to be ready to march at 6:00 AM. This message also informed them of the general mission of the division. He then issued the following order:

1st Div,
WOODSBORO,
2 Oct 19, 1:00 AM.

FIELD ORDERS
No 7

Maps: 1:62500.

1. All indications point to an early attack by the Red army. The Red 7th Corps, consisting of the 13th and 14th Divs, reached HIGHFIELD and CAVETOWN yesterday. Have reliable information that they will continue the advance toward THURMONT today.
   There is no change in the position of our army.
2. (a) This division will organize and defend the east bank of the MONOCACY from DOUBLE PIPE CREEK to hill 300 yards south of CONTINENTAL SCHOOL, both inclusive, and will prevent the enemy from crossing the MONOCACY.

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(b) POSITIONS.

Outpost Position.

Line of Resistance: Point 345.0—722.5, point 344.0—721.5, point 343.8—720.5, point 342.3—719.4, point 340.0—717.7, point 338.4—716.4, point 338.1—715.6, point 338.8—715.2, point 338.8—714.4, point 338.4—713.1.

Battle Position.

Line of Resistance: Point 345.3—722.4, point 344.0—720.0, point 342.2—718.5, TROUTVILLE, point 339.2—715.0, point 339.0—713.5.

Regimental Reserve Line: Hill northeast of road junction 426—TOLLGATE—crossroads 427—point 343.6—718.8, OAKHILL SCHOOL—point 340.8—715.8, point 339.0—713.5.

Second Position.

CHESTNUT HILL—LEGORE—NEW MIDWAY—LADIESBURG—B.M. 403.

(c) Sectors:

North brigade sector.

South brigade sector.

Boundary between sector: MARTINS MILL—OAKHILL SCHOOL—THE HILL SCHOOL, all included in the south brigade sector.

3. (a) (1) The 1st Brig, with one company, 1st L Tank Bn, and one company, 1st Engrs, attached, will organize and defend the north brigade sector. A flanking group will be maintained north of DOUBLE PIPE CREEK.

(2) The 2d Brig, with one company, 1st L Tank Bn, and one company, 1st Engrs, attached, will organize and defend the south brigade sector. CHESTNUT HILL will be strongly held.

(3) One battalion of infantry will be held in sector reserve in each brigade sector. These battalions will be located as follows:

3d Bn 1st Inf in the vicinity of point 346.0—719.7.

3d Bn 4th Inf in the vicinity of point 339.2—712.7.

(b) Each sector commander will employ machine guns as follows:

In the outpost position not to exceed two machine gun companies.

In defense of the line of resistance of the battle position not less than two machine gun companies.

One machine gun company will be held in brigade reserve and will prepare positions in both the regimental reserve line and in the second position.

The 1st MG Bn, as part of the division reserve, will take station at NEW MIDWAY. It will reconnoiter and prepare positions in the second position between LEGORE and LADIESBURG, and on the regimental reserve line for 1,000 yards south and 2,000 yards north of OAKHILL SCHOOL.

For details see Machine Gun Annex.

(c) The 1st LA will support the north brigade sector. The 2d LA will support the south brigade sector. The 3d HvA will be in general support of the division.

All guns will be located so that they can place an effective barrage in front of the MONOCACY. Special attention will be paid to the section between STULLS FORD and MYERS FORD.

One bn, 3d HvA will be placed far enough forward to be able to fire on all important crossroads east of a line through JIMTOWN—GRACEHAM.

For details, see Artillery Annex.

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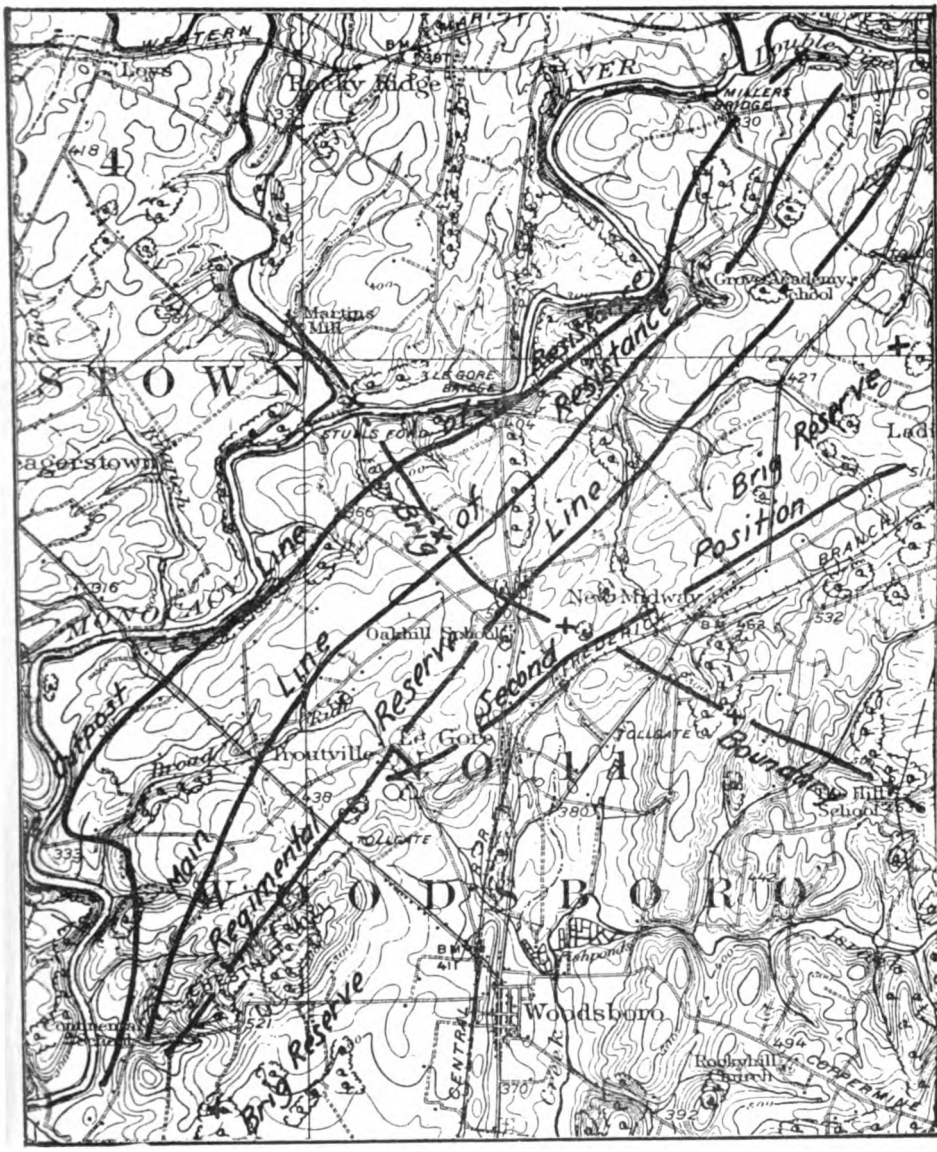

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(d) Co A 1st L Tank Bn is attached to the 1st Brig and will take position in the woods west of GROVE ACADEMY SCHOOL. CO north brigade sector will employ it to assist counter-attacks against penetrations between LEGORE BRIDGE and DOUBLE PIPE CREEK.

Co B 1st L Tank Bn is attached to the 2d Brig and will take position along the creek 1,000 yards northwest of B.M. 411.

CO south brigade sector will employ it to assist counter-attacks against penetrations between the CREAGERSTOWN—WOODSBORO road and the ford southwest of CONTINENTAL SCHOOL.

1st Tank Bn (less 2 cos) will be in division reserve and will take position in LEGORE. It will be prepared to assist counter-attacks against penetrations between STULLS FORD and MYERS FORD, and to assist all general counter-attacks.

For details see Tank Annex.

(e) The following troops constituting the division reserve will take positions as follows:

3d Bn 2d Inf at NEW MIDWAY.
3d Bn 3d Inf at LEGORE.
1st MG Bn at NEW MIDWAY.
1st Tank Bn, less Cos A and B, at LEGORE.

These troops will reconnoiter and prepare positions in the second position but will not occupy them without further orders. When alerted, division reserves will assemble in their camps ready to move. All roads leading to the front will be reconnoitered and marked. Guides will be designated for each road.

Infantry battalions will make provision for rapid entrucking. Trucks will be held at TOLLGATE for the rapid movement of these troops to threatened points.

(f) The 1st Cav will cover the mountain passes north and south of THURMONT, delaying the advance of the enemy and observing his strength, dispositions, movements, and intentions. When forced to withdraw, the 1st Cav (less one troop) will retire to the left flank and will protect the crossings of the MONOCACY south of CONTINENTAL SCHOOL; one troop will be detailed to cover the right flank.

(g) The 1st Obsn Sq will obsreve toward CAVETOWN, HIGHFIELD, HAGERSTOWN, and GREENCASTLE, and the MONOCACY between BRIDGEPORT and FREDERICK.

(h) One company, 1st Engrs will be assigned to each sector, to assist in the organization of the ground.

1st Engrs (less 2 companies) will prepare for destruction all bridges over the MONOCACY south of DOUBLE PIPE CREEK and north of FREDERICK. Bridges will be destroyed on the orders of sector commanders or in case of emergency. All fords will be made impassable.

It will collect at suitable points all boats and ferries of value to the command and will destroy all others.

It will make provisions for the destruction of any bridges that the enemy may place across the MONOCACY.

It will assist in the organization of the ground of the second position.

(x) (1) All troops except the artillery, cavalry and tanks will march from their present positions at 6:00 AM. The artillery will march from present positions at 7:00 AM. The cavalry and tanks will march from WOODSBORO at 5:30 AM.

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(2) The mission of the outpost position is to prevent surprise crossings, to delay crossings in force, and to disorganize any serious hostile attack.

The mission of the battle position is that of the main line of resistance and to prevent the enemy crossing the river in force.

(3) In each sector two battalions of infantry will be posted on the regimental reserve line; the remaining battalions will organize centers of resistance and will extend from the line of observation to the battalion reserve line of the battle position.

Each sector will furnish a connecting group of one platoon of infantry and one section of machine guns for maintaining contact between the two sectors.

(4) In case of either a surprise attack or a foreseen attack, all troops in the outpost position will fight in their positions to the last.

(5) In the outpost position, local counter-attacks will be launched by sector and subordinate commanders on their own initiative.

Regimental, brigade, and division reserves will be employed to maintain the battle position.

(6) Counter-attack barrages will be prepared between the outpost position and the battle position and within the battle position.

All troops will be employed in the organization of the outpost position and the main line of resistance. No work will be done on the battalion and regimental reserve lines and the second position until further orders. Emplacements will be prepared for all machine guns including those in brigade and division reserves.

4. SSW: WOODSBORO.
See Adm O.

5. (a) Plan of Signal Communications.
See Signal Communications Annex.

(b) Axes of signal communications.
1st Div: WOODSBORO—CREAGERSTOWN road.
1st Brig: LADIESBURG—MOUNT ZION CHURCH—MILLERS BRIDGE road.
2d Brig: WOODSBORO—CREAGERSTOWN road.

(c) Command posts.
1st Div. WOODSBORO.
1st Brig: LADIESBURG.
2d Brig: WOODSBORO.
1st FA Brig: WOODSBORO.
1st Engrs: WOODSBORO.
1st MG Bn: NEW MIDWAY.
1st Tank Bn: LEGORE.
1st Cav: On the march.

A,
Maj Gen.

Distribution A.

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Map Problem—A River Crossing

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

Maps: General Map, Gettysburg-Antietam, 1"=10 miles.
Pennsylvania and Maryland Geological Survey Map, 1:62500, Antietam and Ijamsville Quadrangles.

General Situation:

The Potomac River divides two hostile states: Blue (south); Red (north). The main Blue army is 10 miles west of Alexandria, facing Washington, confronting a superior Red army. On March 10, 1920, the 1st Blue Division, with cavalry attached, crossed the Potomac River one mile south of Catoctin Lander post office and raided toward Baltimore, Westminster and Gettysburg. The permanent bridges over the Potomac have been destroyed.

Special Situation (Blue):

The 1st Division has the 1st and 2d Cavalry attached. The 1st Battalion, 340th Engineers, 3d and 4th Ponton Trains, and 1st Battalion, 20th Infantry, are near Catoctin Lander post office as guard for the bridge. The 340th Engineers (less 1 battalion), with 1st and 2d Ponton Trains sufficient for bridging the Potomac, is with the division, which is returning home from the raid.

On March 18th, the division advance guard was violently attacked as it was ascending the heights on the south bank of the Potomac River near Catoctin Lander post office, thrown back to the river bank, and the bridge damaged.

At 5:00 PM, March 18th, the situation of the 1st Division is as follows:

Advance Guard:
1st Brigade.
1 battalion, 1st Light Artillery.
1 squadron, 1st Cavalry.
1 company engineers.
1 ambulance company (horsed)

in the vicinity of Catoctin Lander post office holding with difficulty the south bank of the river with two battalions of infantry. Balance of force and bridge guard on north side.

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The ammunition and sanitary trains are between Jefferson and Feagaville; remaining division trains and field trains between Mountville and Church Hill.

The 1st Cavalry (less 1 squadron), and the 2d Cavalry (less 1 squadron), under General D, are watching the Monocacy from Frederick (inclusive) to the Potomac River. They have destroyed the bridges over the Monocacy in their sector.

The 1st Field Artillery Brigade (less 1 battalion light artillery) is just north of Jefferson, bivouacking along the road Jefferson—544 (to north); the 3d Infantry is bivouacking near road junction 528, just west of Jefferson; and the 2d Brigade (less 3d Infantry) is between Jefferson and Mountville. The remaining units of the division and headquarters are at Jefferson.

Information concerning the enemy is:

1st Red Division, marching northwest on the Rockville—Frederick road (General Map) advance elements at 4:00 PM just east of the Monocacy.

One reinforced brigade Red infantry, on the Rockville—Point of Rocks road; advance elements at 3:00 PM, bivouacking 10 miles east of the Monocacy.

The 2d Red Division (less 1 brigade infantry and 1 regiment light artillery) crossed to south bank of the Potomac near the mouth of the Monocacy, and is the force which encountered the Blue advance guard opposite Catoctin Lander post office. It is now holding the high ground in the bend of the river opposite Catoctin Lander post office, and has patrols as far west as Short Hill.

An unidentified Red force, believed to be a reinforced brigade, marching south from Hagerstown, crossed the Potomac on the afternoon of March 18th near Sharpsburg, and has advance elements in Harper's Ferry. It is in contact with the 2d Red Division.

General A, commanding the 1st Blue Division and attached troops, has received word from the main Blue army that he can expect no assistance from it, but should cross the Potomac as soon as practicable and rejoin the main Blue army.

Required:

General A's formal orders to cover his proposed action up to 9:00 AM, March 19, 1920.

NOTE:—Three hours will be considered in this problem as required to bridge the Potomac with ponton train, provided there is no hostile interference.

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AN APPROVED SOLUTION

1st Div,
JEFFERSON, MD.,
18 Mar 20, 7:00 PM.

FIELD ORDERS
No 10

Troops:

(a) Det A,
Gen B
1st Brig
1 bn LA
1 bn HvA
1 sq 1st Cav
1 amb co (horsed)
1st Bn 340th Engrs
1st Bn 20th Inf
3d and 4th Pon Tns

(b) Det B,
Gen C
2d Brig
1st FA Brig (less 1 bn LA and 1 bn HvA)
1st Engrs
340th Engrs (less 1st Bn)
1st and 2d Pon Tns
1 amb co
1 F Hosp co
1st MG Bn
1 sq 2d Cav

(c) Cavalry
Gen D
1st Cav (less 1 sq)
2d Cav (less 1 sq)

1. Our advance guard has met strong hostile resistance opposite CATOCTIN LANDER P. O. About 2 bns of inf have crossed to the south side of the POTOMAC, and are opposed by the 2d Red Division (less 1 brig inf and 1 regt LA).

   A hostile reinforced brigade is on the ROCKVILLE—POINT OF ROCKS road with advance elements 10 miles east of the MONOCACY. The head of the 1st Red Div marching on the ROCKVILLE—FREDERICK road has reached the MONOCACY. A hostile force of about one reinforced brigade, marching from HAGERSTOWN, today crossed the POTOMAC near SHARPSBURG, and has some troops at HARPER'S FERRY. Hostile patrols are covering the south bank of the POTOMAC RIVER between HARPER'S FERRY and POINT OF ROCKS.

   Our main army remains opposite ALEXANDRIA.

2. This division forces tonight a crossing of the POTOMAC RIVER, turning the hostile force that is opposite CATOCTIN LANDER P. O.

3. (a) Det A will attack before daylight the hostile forces opposite CATOCTIN LANDER P. O., pushing toward LOVETTSVILLE. Constant artillery activity and patrolling will be maintained tonight. The north bank of the POTOMAC, from BRUNSWICK (incl) to POINT OF ROCKS (incl) will be observed.

   (b) Det B will march from JEFFERSON at 8:00 PM today via FREDERICK ROAD, and will force a crossing of the POTOMAC near KNOXVILLE before daylight.

   It will block any hostile advance from the west along roads bordering the POTOMAC RIVER, until relieved by the cavalry, as directed in paragraph 3 (d).

   After crossing, it will seize at once the high ground near LOVETTSVILLE and, in co-operation with Det A, will attack promptly the hostile forces now opposite CATOCTIN LANDER P. O.

   (c) The cavalry will delay any hostile advance west of the MONOCACY, and will cover the movement of the trains. After the trains have completed the crossing of the POTOMAC, the cavalry will protect the taking up of the bridge near KNOXVILLE; relieving prior thereto Det B from covering roads along the POTOMAC, ordered in paragraph 3 (b).

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(d) The 1st Obsn Sq will watch hostile movements in vicinity of CATOCTIN LANDER P. O. and HARPERS FERRY, and give early notice of hostile movements.

4. (a) The division and field trains, less detachments, will march in time to start crossing the POTOMAC at KNOXVILLE at 6:00 AM and then will march via GEORGES MILL—407—445—513. They will remain north of PETERSVILLE, until assured that the crossing of the POTOMAC is free. The Am and Sn Tns will march at head of the column in order named.

(b) SSW will be established by Det A near CATOCTIN LANDER P. O. and by Det B near GEORGES MILL.

(c) See Administrative Order No 10.

5. (a) Axes of Signal Communications: Div: JEFFERSON; KNOXVILLE; GEORGES MILL; 445; 513.
Det A: CATOCTIN LANDER P. O.; LOVETTSVILLE.
Det B: JEFFERSON; KNOXVILLE; LOVETTSVILLE.
Cav: Same as division.

(b) Command posts:
1st Div closes at JEFFERSON at 10:00 PM and opens at KNOXVILLE at same hour. It will advance across the POTOMAC and be established on the division axis early on the 19th.
Det A: near CATOCTIN LANDER P. O.
Det B: KNOXVILLE; GEORGES MILL; LOVETTSVILLE.
Cavalry: along division axis of communication.

(Signed) A,
Maj Gen.

Official
(Sig) GT
Asst C of S G3

Distribution:

CG 1st and 2d Brigs and 1st FA Brig
Gens B, C and D
COs 1st MG Bn
1st Engrs
340th Engrs
1st Bn 340th Engrs
1st Bn 20th Inf
Tns
APM

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(B) RETREATS—PURSUITS

Principles

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

RETREATS

Retreats are strategic or tactical. A strategic retreat is one made for causes other than local ones; for example: withdrawing troops for use in other localities; to avoid battle, with a view to fighting under more advantageous conditions later. A tactical retreat is one required by local circumstances and may be either voluntary or involuntary. An involuntary retreat is one forced on the battlefield, and is usually made under unfavorable conditions. A voluntary retreat is one made before the enemy has compelled it.

Retreats are caused ordinarily by lack of numbers, materiel, or morale, by which the enemy has obtained a superiority of strength. They may be caused by poor tactical dispositions. The retreat of the Confederates after Gettysburg in 1863 is an example of retreat due to loss in numbers, ammunition, and morale, caused by the failure of Confederate attacks on Federal forces, who as a result attained superiority, not only in numbers, but also in morale. The Confederate retreat from Yorktown in May, 1862, is an example of a retreat made on account of poor tactical dispositions, leading to a fear of being cut off by a turning movement. Here the Confederate commander abandoned his positions, and retreated toward Richmond with a view to fighting a decisive battle later under more favorable conditions.

In retreats, defenders have certain advantages over the pursuers. They are not so dependent upon trains following them with supplies, but frequently find sufficient supplies in the country through which they pass. The instinct of self-preservation lends strength and speed to retreating forces. They have the use of such roads and railroads as exist.

During a retreat, the defenders usually have the initiative, that is, they can decide upon the rate and

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direction of retirement, and the place, if any, where resistance will be offered. The pursuers are obliged to follow, and ordinarily must attack the position selected for defense, or engage in turning movements, possibly still more advantageous to the defenders. By making successive halts, strongly resisting the pursuing enemy and counter-attacking vigorously when opportunity offers, the defenders have an opportunity to increase their morale and exhaust the pursuing force. This maintenance of the morale of the defenders must be kept in view and there is no better way of accomplishing it than by resuming the offensive, even if on a small scale, on favorable occasions. Washington, upon the capture of New York by the British, retreated into the interior country, being unable at that time to fight a decisive battle with the forces at his disposal; but by his attack at Trenton, he maintained the morale of his troops by a minor but successful offensive action. In addition to maintaining the spirit of the army, the effect of an occasional victory upon the government and the people must be considered, as it may have a decisive influence upon the course of the war. Although the Revolutionary armies of the Continental States in 1777 were obliged to retreat into the interior of the country, abandoning to the British such positions on the seaboard as they chose to occupy, occasional offensive actions not only maintained the spirit of our own army and people, but had a strong influence in leading to the French alliance, one of the principal causes for the successful conclusion of the war. Similarly in 1914, the resistance offered by the Belgians while retreating had a strong influence in obtaining the British alliance; and the resistance of the Serbians in their retreats of 1914 and 1915 led to their receiving valued allied support.

Retreats, when voluntarily made, may be toward the rear or eccentrically to one side. With an involuntary retreat, there is no choice. Troops on the battlefield retreat straight to the rear, and other troops not engaged conform to this movement to avoid separation of the army into fractions; but if the retreat is voluntary, there is sometimes a choice as to the direction in which it is to be made.

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Retreats made simultaneously in different directions by fractions of retreating troops are not ordinarily to be encouraged. It is seen readily that such an action, while tending to divide the pursuing force, gives the latter the advantage; as in addition to their usually superior strength, they obtain interior lines, a situation more favorable to the pursuers than to the defenders. At the beginning of December, 1870, the French were decisively beaten near Orleans by a German force and retreated in three different directions, east, south and west. The Germans held the captured central point and were able to combine successively against the separated French armies. Ultimately the Germans defeated each army and ended the war.

Retreats in general are made with a view to abandoning as little territory as possible, as an abandonment of territory results in gain of morale to the pursuers and a corresponding loss to the defenders. Troops constantly retreating become disheartened easily; and losses from straggling, added to those incident to any war, may be greater than those required to fight a decisive battle. When considerable territory is given up, it may involve the loss of important economic resources, with important gains to the pursuer.

The influence upon the local government and the people of the loss of country that is abandoned must be considered. It may have the most opposite effects. In 1914 the abandonment by the allies of large and valuable territories in Belgium and France did not result in disheartening these countries, as was probably expected by the Germans, but had the effect of spurring them to renewed resistance which finally resulted in the defeat of the invaders.

At times a retreat is made deliberately deep into the interior, with the intention of abandoning so much territory to the pursuer that he will exhaust himself in occupying the hostile country; and with a view to enabling the retreating forces ultimately to fight on more equal terms. The retreat of the British and allies in the Spanish Peninsula in the winter of 1810-1811 to the lines of Torres Vedras is an example of such a retreat. In this campaign Wellington, commanding the allies, was too weak at the commence-

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ment of the campaign to meet the French under Massena in Spain, and retreated out of that country through Portugal to the previously constructed lines of Torres Vedras. The invaders, finding themselves in a strongly hostile country, requiring large detachments of troops to protect the line of communications, and where local resources of value did not exist, became constantly weaker the further they advanced; and when they arrived opposite the lines of Torres Vedras, were too weak to assault them. Passing the winter opposite these lines completed their exhaustion, and forced both the giving up of the campaign and a retreat back into Spain. Napoleon's invasion of Russia in 1812 is another example of retreat deep into the interior. This was not according to the Russian plan of operations, but was forced by combats. Nevertheless it was the best plan available, and when Napoleon reached his objective at Moscow, he had exhausted his army so that he was unable either to maintain his position or continue offensive operations. He had in consequence to abandon his mission and retire completely out of the country.

In 1870 the French conducted retreats after the opening engagements of the war, on August 5th, at Woerth and at Spicheren. The retreat made into the interior of France was successful, but the retreat made toward the Belgian frontier by Bazaine's forces, and later by McMahon's army, resulted in their being forced against the frontier with insufficient maneuvering space and ended in their capture. The result was the same in the case of Bourbaki's French army in February, 1871, when he allowed himself to be forced across the frontier into Switzerland. It is important for an army in retreat to provide maneuvering space for its troops by moving toward the center of the country, and not against a neutral frontier or an impassable obstacle.

The direction of a retreat at times may be materially changed with advantage to the defender. Hood in 1864, after the capture of Atlanta by Sherman's army, retired eccentrically into Alabama where he had an opportunity to attack Sherman's line of communications, attacks which could not have been ignored. But instead of doing this, he started an independent campaign which later ended in his

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complete defeat at Nashville, and the loss both of his army and the campaign. In 1812 after the fall of Moscow, the Russians retreated eastward; but instead of maintaining this direction, moved southward to Kaluga. Here they took up a flank position threatening Napoleon's line of communications, which caused the French to begin their withdrawal from Russia. Such radical changes in the direction of a retreat can be accomplished only when the country is large, affording ample maneuvering space, and when the pursuit is not too close.

In retreats the question as to the abandonment or destruction of supplies must be considered. When the retreat is voluntary, such an action may be begun without the enemy observing it. The destruction of supplies by fire or demolitions may give the enemy information, causing a pursuit to start earlier than otherwise would occur. Tactical conditions must determine whether it is more important to conceal from the enemy that retreat has started, or deprive the enemy of the supplies which he would capture unless they were destroyed.

The removal of the civilian population from country about to be abandoned is frequent. It does not always have advantageous results. Removal in retreat of civilian population, of both sexes and all ages, is difficult to regulate, and furnishing supplies and shelter for them hard to accomplish. During the retreat they necessarily cover much space, and may embarrass greatly the retreating forces. It is a natural tendency for evicted civilian populations to take all kinds of vehicles for transportation of women, children, food and valuables, and all baggage that can be saved. Retreating forces seldom have time to examine these columns; and management of them may cause serious difficulties. A study as to the advisability of evacuating civilian populations and its regulation is a function of G1, and of the evacuation or destruction of supplies a function of G4; the matter then is taken up with G3, and the final decision is made by the commander of the forces, or the national government.

The evacuation of supplies is advisable when time permits; but as ordinarily the time is none too great, only hasty

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measures can be taken. The tendency is to bring an enormous amount of articles of little value to the trains or railroads charged with evacuating supplies. Consequently arrangements should be made to insure that only proper articles in right quantities are moved.

In evacuating railroad rolling stock, care must be taken that the number of cars and engines sent to the rear is not so great as to block regulating stations, yards, and main lines. Such conditions lead to complete blockades of railroads, with inability to move anything in either direction. This occurred in Russia in 1915, and in Serbia later in the same year. It may be better to destroy or even abandon railroad material to the enemy rather than blockade railroads resulting in the defenders being unable to engage in battle due to lack of necessary supplies.

In retreats on the battlefield, rear guards are composed of the troops most available. Machine guns and artillery are most useful. A broad front is desirable, since there is no intention of fighting a decisive action. The strength of rear guards required to stop pursuits is smaller than at previous times. In 1918, on the Ourcq and in Champagne, German rear guards held the rear line with an average of about one machine gun or automatic rifle to 20 meters' front, or about a company of infantry, including supports, to the kilometer. This force was supported by at least one battery of artillery, and in many cases by a battalion. Such a force, disposed in an irregular manner, was a difficult target on which to concentrate artillery fire, and with proper concealment, was able to hold up attacks made by forces 10 to 20 times their superior for from 12 to 72 hours.

Rear guards fighting in this manner, with weak infantry detachments supported by artillery, have an opportunity to occupy successive positions; one position being prepared while the preceding one is being defended. The retreat from one to the other position should be a voluntary one; that is, the rear guard should not defend a line until abandonment is compelled, as such conduct makes retirement difficult, and incurs the risk of disaster. Successive retreats of this nature were made by the Germans, in the summer of 1918, from the Marne to the Vesle, and at points in the Meuse-Argonne campaign.

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PURSUITS

Pursuits are undertaken to destroy hostile forces, to seize material, or for psychological reasons. All these reasons may be present, but the destruction of the hostile forces is the most important. It is a strategical means of utilizing victory and should be employed for this purpose. Failure to recognize that pursuit is likely to be necessary has resulted in failures to obtain important results from great victories. Had Meade, after the battle of Gettysburg, started a pursuit with fresh troops, especially with cavalry, he would have had a chance to cut off the Confederate troops at or near the Potomac River and to capture the whole of Lee's army.

Pursuits immediately after a battle are seldom successful, and are likely to be still less so in the future than in the past.

The most successful pursuits in past years, such as that made by Blucher after the battle of Waterloo, were made by fresh troops immediately after a victory had been gained, and from positions close to the line of battle. In those days, with small forces and short ranges of fire, it was possible for reserves to be close to the battlefield, and while in full view of what was occurring, to remain unengaged. It was not difficult to determine upon the moment for starting the pursuit, or to decide the direction toward which it should be undertaken. The commander of the army frequently was present with the reserve, and in a position himself to decide upon these questions, and give directly to his troops the necessary orders.

But the range of fire arms has increased; troops have taken deeper and more dispersed formations; conditions of the old battlefield no longer exist. Assaulting troops seldom find more than dead and wounded when they capture the enemy's position. They receive fire from a distance, from woods, villages, or slopes, by machine guns or artillery; they do not see the enemy's troops in motion. They are unable to decide upon the direction in which the enemy has retreated, or even if he is retreating at all. Instead of moving forward they engage in a fire fight until the situation becomes better known. The reserves, to whom ordinarily

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would be entrusted the pursuit, are not now immediately in rear of the assaulting troops, as in the old days, but a considerable distance away. They do not always come up promptly. They fail to recognize the fact that the enemy has retreated, and by the time they are ready to start pursuit, the enemy has gained such a distance as to make it difficult to overtake him. And when the pursuers start, they are met by machine gun and artillery fire from unrecognized points, and are delayed until reconnaissance enables the places from which fire is being delivered to be recognized, and necessary measures taken for their reduction. Roads are seldom available. The mere passage of retreating troops over roads damages them for the pursuers. In addition, retreating troops naturally effect as many demolitions as possible.

A *defender* who is beaten has an advantage in starting a retreat and in avoiding immediate pursuit. Usually the attacking troops are exhausted to a greater extent than those of the defender. The latter has not had exhausting night marches preparatory to the attack, has remained in the same position, and can start his retreat in better physical condition than the attacker, who has had an all-night vigil, long marches, severe fire to endure, heavy packs, and has lost the physical ability to make a rapid advance.

When the retreat is started by a beaten *attacker*, the condition is still to the advantage of those retreating. For, while in this case the attacker may have had night marches, still he usually felt himself the superior in strength at the time he started his attack, and the defender probably accepted this condition. The defenders do not always recognize, in such a case, that a retreat has actually begun, and the defender is enabled to start without interference. In July, 1918, the Germans, after having made an unsuccessful attack on the Marne, were able to start a retreat without being observed or closely followed by the allied troops, and the same conditions obtained after the battles on the Ourcq. At the Marne, a beaten *attacker* retreated successfuly because the defenders failed to understand the situation correctly; at the Ourcq, it was a beaten *defender* who retreated successfully, the attackers not realizing the extent of their victory.

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Difficulties that pursuers have with their lines of communications have been discussed. But there is an advantage in being a pursuer. Troops advancing gain in morale, and the advance itself may lead to gains of valuable economic resources. This was the condition in France and Belgium after the German advance of 1914; in Russia after the German advance in 1915; and in Rumania after the German advance in 1916. The advance of Federal troops against the Confederates in 1863 and 1864, while not gaining resources necessary for them, did result in depriving the Confederates of much that they most desired, and was one of the principle causes of the fall of the Confederate States.

When the pursuit leads into the interior of a hostile country, its occupation may become such a burden to the pursuers as to reverse their original superiority and lead to the ultimate destruction of the pursuing forces. This occurred not only in Napoleon's invasion of Russia in 1812, but also in the French invasion of Spain and Portugal during the Napoleonic war, and quite frequently in past centuries.

The result of occupying hostile territory may have an unfavorable reaction on the pursuers, in that the difficulties of reorganizing, administering, and defending occupied territory frequently result in repressive measures being adopted, which in turn lead to reprisals by inhabitants, and to their obtaining sympathy and assistance from allies. Such a condition may reverse completely an original superiority of the pursuers. We have illustrations of such results in the German occupations of various countries seized by them during the World War.

Pursuing forces ordinarily have superiority of numbers, but the larger the number the greater the difficulty in moving forward and the less the speed. Flanks of a pursuing force must be guarded; they are vulnerable and small attacks against them may yield important results. As the invader advances into hostile territory, he presents a constantly more extended line of communications, exposed to flank attacks; and although he may obtain valuable supplies in the country occupied, he never can find everything he needs. Protection of the line of communications is necessary to the maintenance of his position, still more to the

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continuation of a further advance; and attacks against the line of communications must be guarded against. In 1862 Grant invaded Mississippi toward Vicksburg. After he had advanced a considerable distance, a successful attack made on his line of communications at Holly Springs resulted in the complete abandonment of this campaign.

While retreating troops attain speed from an instinct of self-preservation, such an incentive is not found in the case of the pursuers. Only when the commanding general himself is upon the field, and personally urges his troops to pursue, can their morale be brought to a point to overcome the difficulties of tired men pursuing a fleeing enemy. Both Napoleon and Frederick the Great did this on occasion, but such a condition hardly will arise in modern times.

Front line troops cannot advance indefinitely, and to order them to do so may lead to disaster. Although the British in their attack at Cambrai in 1917 met comparatively little resistance, orders to pursue indefinitely resulted in their becoming greatly extended, with insufficient forces to meet counter-attacks, which condition finally resulted in the pursuit as such becoming a failure. The fact that front line troops will be exhausted must be recognized, and provided for, by keeping in hand fresh troops to take up pursuit. It is hard to decide where this point will be, and to transmit orders in time from the commander to the troops that are to make the pursuit.

Tactically, in a pursuit, cavalry is a most valuable arm. If used in time it may be sent around retreating forces, if they are not too large; it can head off the retreat, and enable the pursuer with his slow speed ultimately to capture the retreating forces. In this manner, Grant captured Lee's army at Appomatox, and General Allenby the Turkish army in Palestine in 1918. It is a mistake for pursuing troops sent out in the first stages to allow themselves to be drawn into any fight still in progress on the battlefield. Their efforts should be to get away from such a local fighting, pass around or through it, and block the hostile retreat. We have discusssed the difficulties of recognizing the situation and the right moment, and of having troops in hand to start at this time; but when it can be done, it promises complete results in annihilating the enemy's forces.

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Pursuing forces should advance on as broad a front as possible. Several columns are better than one, as this favors rapid deployment; and they should attack before the enemy can prepare for defense. In small commands, such formations also afford a possibility of envelopment. Especially when a retreat is directed toward a defile, such a formation promises decisive results, enabling large gains to be made. But when retreating forces are in view, and within range of effective fire, it may be preferable to fire upon them rather than advance. This is pursuit by fire, and may occasion greater losses than an advance. Local commanders must decide on the method of immediate pursuit.

A pursuit should be clearly distinguished from following up a voluntary retirement from one position to another. There are occasions when the attack has induced the enemy to retire, but has not forced him to do so. When the enemy retires with intent to fight again, and a pursuit is started with small bodies of troops, it may result in their becoming engaged with the retreating troops in a new position against which all their efforts may accomplish little.

In such cases, in following retreating troops from place to place, the pursuers may exhaust themselves in constant attacks on prepared positions. The difficulty for the pursuers is to decide, after the enemy abandons a position, whether he is doing so voluntarily with the view to fighting on another line in rear, or whether the abandonment was forced as a result of exhaustion and inability to continue the fight longer. In follow-up movements, the pursuit is liable to become a succcession of attacks. If the positions occupied by the retreating forces can be turned, the pursuit may be hastened; but if the lines are extensive, or rest on impassable obstacles, such a means of obtaining victory is impracticable.

While rapid, vigorous pursuit on the battlefield is, for the reasons given, seldom successful, strategical results from victory followed by a slower pursuit may become more valuable than tactical advantages obtained by seizure of booty and stragglers in an immediate pursuit. After the battle of Gravellotte-St. Privat, the Germans started no tactical pursuit, but recognizing as early as noon of the day

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of the battle its probable result, issued orders for a new strategical deployment based upon the expected victory. This resulted in most substantial gains, greater than could have been obtained by a tactical pursuit on the battlefield. Every battle won should lead to a new strategical estimate of the situation, which should be the basis for the movements next made. While it may take hours, and sometimes a full day, to start the movement of large forces, they promise results of a decisive character. But, as pointed out, the moment for starting a pursuit is seldom recognized; and when recognized, the troops seldom are available or in condition to carry it through.

A Retreat

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

Maps: General Map, Vicinity of Leavenworth 1"=15 miles.
Kansas-Missouri Geological Survey Map, 1:62500, Leavenworth and Vicinity.
Map of Fort Leavenworth and Vicinity, 1:21120, Platte City and Waldron Sheets.

General Situation:

On January 5, 1920, Iowa (Red) declared war on Missouri (Blue); Kansas and Nebraska remained neutral. On January 5th, the Red 1st Corps of three infantry divisions and one cavalry division crossed the frontier, reaching the line Farley (358—741)—Liberty (395—740)—Excelsior Springs (415—750) on January 14th.

The Red advance had been opposed with little destructive work and the railroads in the rear had been repaired.

Other strong Red forces, whose mobilization was far from complete, were directed on the line St. Joseph (355—795)—Cameron Junction (410—795) to construct a defensive zone including those points.

The Blues completed their mobilization south of the Missouri River by January 14th, on which day they crossed the river and came in contact with the Reds.

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Special Situation (Red):

Note that in this problem Red troops are our own troops.

On January 15th the Red 1st Corps is in one line, from west to east, 1st, 2d and 3d Divisions, in contact with the enemy. It made no advance on this date.

The enemy's forces have been identified as consisting of an army of 9 divisions and 1 cavalry division. The Red corps commander had received instructions to delay the enemy's advance toward St. Joseph at least a week, and at 8:00 AM the corps issued this order:

1st Corps (Red),
DEARBORN (365—770), Mo.,
15 Jan 20, 8:00 AM.

FIELD ORDERS }
No 11 }

Maps: General Map 1"=15 miles; Geological Survey, 1:62500.

1. A hostile army, with 6 divisions in first line and 3 in second line and a reinforced cavalry division on its right, has crossed the MISSOURI RIVER and this morning is in contact with our troops south of the line FARLEY—LIBERTY.
   Reliable information indicates that the enemy intends to attack. Our main army is preparing a defensive zone ST. JOSEPH—CAMERON JUNCTION.
2. (a) This corps delays the enemy's advance toward our main position.
   (b) Tomorrow the corps defends the general line BEVERLY STATION —TRACY—co-ordinate 755; and later will defend the line MISSOURI RIVER—WOODLAND SCHOOL—co-ordinate 762.50. Troops retire from present positions tonight.
3. (a) 1st Div zone of action:
   Right boundary: MISSOURI RIVER.
   Left boundary: co-ordinate 363.
   (b) 2d Div zone of action:
   Right boundary: co-ordinate 363.
   Left boundary: co-ordinate 375.
   (c) 3d Div zone of action:
   Right boundary: co-ordinate 375.
   Left boundary: co-ordinate 390.
   (d) The 1st Cav Div covers the left flank of the corps.
   (e) The 51st Regt CAC (Railway) (8" guns), Co A 1st Gas Regt and 1st Sq 1st Cav are attached to the 1st Div.
   (x) Gassing and demolitions in evacuated areas will be carried out thoroughly.
4. See Adm O No 20.
5. (a) Axes of signal communications:
   1st Div: ELDORADO SCHOOL—PLEASANT RIDGE CHURCH—COXE SCHOOL.
   2d Div: No change.
   3d Div: No change.
   1st Cav Div: No change.
   1st Corps: DEARBORN—ST. JOSEPH.

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(b) Command posts:
1st Div: PLEASANT RIDGE CHURCH.
2d Div: No change.
3d Div: No change.
1st Corps: DEARBORN.

F,
Maj Gen.

Later corps headquarters advised the 1st Division that, the retreat having been foreseen, extra demolition outfits and persistent gas in bulk were available.

At 9:00 AM when General A, commanding the 1st Red Division, received this order, the 1st Brigade held the line Burns Lake—high ground west of the Platte River—thence east to north of Prairie Creek and Big Creek; with one regiment on each side of the Platte River. The outpost line extended along Horseshoe Lake—crossroads 907—Union Chapel—B.M. 1002. The 2d Red Division connected with this line on its left. The 2d Brigade had one regiment in the woods north of Hackberry School, and the balance of the brigade in the woods north of Tracy. The 1st Field Artillery Brigade had one battalion of light artillery in action about 1 mile south of Eldorado School; the other battalion of the same regiment and one battalion of heavy artillery were in the vicinity of Morton School. The balance of the artillery brigade was in the woods along the line West Platte—Tracy. The remainder of the 1st Division was north of Bee Creek bivouacking in the vicinity of Hazelwood School.

General A obtained from various sources the following information of the enemy. The 1st Blue Division was advancing up the river road with its advance infantry elements north of Waldron. The 2d Blue Division was marching parallel to the river, with its advance infantry elements on Brush Creek near co-ordinate 737. Outposts of these two divisions were in contact with the Red outposts.

The Blue divisions had crossed the Missouri River late on the 14th; and resuming their march on the 15th, arrived at their present positions about noon on the 15th, bivouacking immediately. Their outposts patrolled vigorously and made attempts to capture prisoners. A third division, completing the 1st Blue Corps, was in rear of the 1st and 2d Divisions and crossed the Missouri River at Kansas City

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today. The air service reports at noon about two Blue brigades of heavy tractor artillery moving toward the front, and going into position south of co-ordinate 733.

The hostile air service is very active and has been generally successful in preventing our own air service from accomplishing anything except obtaining an occasional photograph of back areas.

The Platte River is not frozen over, and is fordable only at the fords shown.

Required:

General A's arrangements and orders for January 16th.

DISCUSSION

General A's mission, given to him by his corps commander, is to withdraw during the night to a position generally parallel to the Chicago, Rock Island & Pacific Railroad. General A has to decide on the method of withdrawal and on the location and occupation of the new position.

It is apparently not the corps commander's intention to fight a serious action on the first line. He states the first position is a delaying one, and probably he will order a retreat to the second position at the proper time. This time cannot be determined yet, since in order to enable our own main forces to complete their mobilization and permit the construction of a defensive zone, as much delay as possible is desirable, without seriously engaging the covering troops. It is impracticable to foresee how long it may be possible to delay the enemy in the first position, but preparations should be made to withdraw when necessary to the second position. The selection of the second position at this time is of great assistance to General A, as it enables him to select the first position with a view to his subsequent retreat. The distance between the two positions is not so great but that, if necessity arises, the troops in the second position could support the troops in the forward position.

It does not appear probable that the enemy proposes to attack today. The fact that he has gone into bivouac indicates a present intention to rest his troops. Attempts of the hostile outposts to secure prisoners and the aerial

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activity of the enemy all indicate preparations for an attack later.

The enemy outnumbers General A about three to one, exclusive of corps and army troops. Assuming that the enemy might deploy his troops for attack that night, he could assault at daybreak, with two infantry divisions on a front extending from just south of Farley to south of B. M. 1002, about 6,000 yards. The artillery is being emplaced; machine guns, although not observed, probably are also going into position. The 3d Blue Division can hardly get into action tomorrow, but it might send part of its artillery, especially motorized regiments, to assist in the attack.

As the enemy has just arrived, he hardly can have accumulated in his front line any great quantity of ammunition or stores. It therefore can be expected that if there is an artillery preparation, it will be short. At this season of the year it is not light before 7:00 AM, and an infantry attack at the earliest hardly would start before 6:30 AM and possibly later. An artillery preparation most probably would commence after 5:30 AM and might be omitted, as the enemy is aware that the Reds have just reached their position and could not have had time to prepare a strong position.

General A considers the line which he is to defend from Beverly Station to Tracy, and thence east and north of the Platte River. The high ground just north of the Platte River from Settles Station to Tracy affords a good defensive position. It is at the present time out of range of the hostile division artillery, it has a good field of fire and an important obstacle in its front. A line north of this cannot be selected under the corps order. A line south of the Platte River on the high ground immediately south of Platte City, with the Platte River in its rear, in addition to not being in conformity with orders received, would be a dangerous one for an inferior force to occupy.

West of Tracy, General A finds that there are two lines that he can well consider; one following generally the road to West Platte and thence along the high ground north and west of Bee Creek, and one following the north side of the Chicago, Rock Island & Pacific Railroad to Beverly Station.

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The first position is the shorter. It has considerable wooded areas in its front, especially toward crossroads 917. The enemy might secure these, giving a base to attack the west of the line toward Bee Creek. The second position has a good field of fire, creeks, the Platte River, and deep railroad cuts cover the front; and the position south of Tracy gives an opportunity for enfilade fire against hostile troops east of the Platte River. The hill at 360.0—750.5 affords observation, and can be used for directing harassing fire throughout the Platte valley, although subject to being enfiladed itself from across the Platte River, when the enemy reaches that vicinity.

Let us now consider the second line announced by the corps commander. The line given is Missouri River—Woodland School—co-ordinate 762.5. This is a general description, and the selection of the line west to the Missouri River is left to General A.

General A's troops marched over this area, and now are occupying it partially. There is a choice of several lines that show possibilities of being good defensive positions. One is from the vicinity of crossroads 968, southwest along the hills having an elevation of about 1,000, to crossroads 978, thence across Bee Creek near crossroads 823, westward to crossroads 995 in the vicinity of Pleasant Ridge Church and toward Platte Valley School. This is a long line for one division but might be shortened by following Bee Creek to the Missouri River. A line parallel to Bee Creek affords an opportunity for flanking fire on hostile troops moving east of that stream. The right flank in such a position ordinarily would be seriously exposed to a flank attack, but in this case it will rest on neutral territory. Even if the enemy fails to observe the neutrality of Kansas, a crossing of the Missouri River cannot be made without its becoming evident in time to enable protective measures to be taken. A line from Missouri River following Bee Creek to Woodruff, thence to crossroads 968, is of about the same length as the one through crossroads 978, and appears preferable by reason of the creeks in its front, offering a good field of fire and an obstacle. Also the left of this line is further from the first position, and less liable to be involved in the abandonment of that position.

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A line still further north than the one described, extending from road junction 909 (364—762) to north of Bonnell Branch, thence westwardly to Burrus School, thence by one of the several routes to the Missouri River, could also be considered; but this involves the abandonment of more territory, and is more suitable for a third line when and if it becomes necessary to retreat further. Moreover such a line would be a longer one than the lines further to the front.

General A decided to select as his first position the one north of the Chicago, Rock Island & Pacific Railroad, from Beverly Station to west of Settles Station; and for a second position the line parallel to Bee Creek from the Missouri River to Woodruff, thence across Bee Creek, following Owl Creek to Woodland School, thence to 363.0—762.50. The front of this position is greater than normal, but only a delaying action is intended and about 18 hours are available to organize.

There remains to be considered the method by which General A will occupy these positions. After noon, when it is apparent that the enemy will not attack today, a deliberate occupation of the new positions and some preparation of the foreground will be possible.

It is desirable that the enemy come upon the positions held as a surprise, thereby avoiding hostile artillery preparation, and possibly catching the pursuing troops in an unfavorable formation. In view of enemy aerial activities and hostile superiority in the air, positions can hardly be occupied during the day without discovery. There appears to be no necessity to move before dark, and as the distances to be marched are small, there will be opportunity to complete the occupation of positions before daybreak. Information naturally would be communicated to commanding officers as soon as possible, to enable them to complete reconnaissances, mark routes, and prepare orders.

General A's infantry is deployed with one brigade in front line and another in a second line. The rear brigade happens to be near the first line and can occupy it without delay. It is also in a position to make reconnaissance before dark if it has not already done so. A good part of the artillery is also in the vicinity of the first position.

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The front to be occupied is about 12,000 yards. If half the infantry is assigned to its defense, it will give a density of about one rifle to two yards, which for a delaying action should be sufficient. In fact, it would be more than has occurred in many successful actions in the World War. The brigade now near the first position can utilize several hours of daylight and all night to organize and should be able to defend it for one short winter day. To reach this position, the enemy's infantry will have to advance about 10,000 yards, which will take several hours. At this season of the year sunset is at 5:00 PM, so the position would have to be defended for not more than about seven hours, and probably less. If the enemy fails in his attack, there is a probability that he will have to bring up his artillery and resort to a formal attack, which might give an opportunity to delay him longer.

The troops in the present front line, south of the one to be defended tomorrow, must maintain their positions until dark, which at present offers no serious difficulty. Then they can withdraw, becoming available either to occupy the second position or to act as division reserves. It seems best to withdraw the forward brigade to the second position, giving at least one day to prepare that position for defense. These troops will be near enough to the first position to enable them to support it if necessary.

The artillery also may remain as it is now divided. One light regiment and the heavy regiment (less one battalion) should be assigned to the first position; the remaining light regiment and the heavy battalion now on the front line should fall back of the second position during the night. This gives depth to the artillery position and avoids the possible loss of all the artillery in case of disaster to the first position. The artillery in the second position is capable of giving some support to the first position.

It would appear advisable to have some of the artillery now in the front line continue firing during the night with a view to delaying the enemy's attack preparations, and concealing from him the withdrawal of the troops. There is no reason why caissons should not dump the ammunition necessary for the guns and return after dark to an assembly

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point near the second position, the guns retiring later, some of them just before daylight.

The railroad artillery regiment placed at General A's disposal can be of great value in delaying the enemy's approach by continuous interdiction fire on roads, bridges, fords and positions found occupied by the enemy. The 8-inch guns have a range of over 20,000 yards and can fire to the rear of the enemy's present front. In case the railroad tracks should be cut by hostile bombing, or by shells, provisions may have to be made to repair tracks. Railroad batteries have a certain quantity of railroad material, and men trained in constructing railroad tracks, but it may be advisable to assign an engineer officer to assist in case it becomes necessary to repair bridges or culverts. The position of these guns can be left to the artillery brigade commander. The engineer troops will be occupied during the night in constructing observation posts and in the demolition of roads, railroads and bridges over which the enemy must advance. The exact demolitions to be carried out can be left to the engineer officers who are on the ground and who can make the necessary studies.

The gas company can be utilized to place persistent gases in bulk on all roads over which the enemy must advance. One truck will carry enough mustard gas in carboys or drums to gas thoroughly about a half-mile of road. In the area to be evacuated there are four north and south roads. A three-mile belt of gas will require 24 truck loads. If the crossroads also are gassed, 12 additional truck loads will be required. In addition, edges of woods in front of the position to be defended, if gas is available, can be made untenable by exploding carboys at intervals; observation points and other places of tactical importance can be similarly treated. This work should be done in connection with demolitions and had best be under direction of the same officer. All of this work in turn should be under the charge of the general commanding the withdrawing troops, to insure an orderly evacuation of the front. Special attention should be given to the gassing of points where roads are obstructed or bridges are destroyed.

The withdrawal should not start so early in the night as to enable the enemy to observe it and induce him to ad-

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vance at an unusually early hour. For this reason the outpost must be left in place to the last moment. Active patrolling must be kept up to prevent hostile patrols from discovering what is occurring inside our lines, and the artillery fire should be active.

General A decides to hold his present position until dark, and then to retire his front line troops to the position selected as his second position, his remaining troops to occupy the first position along the Chicago, Rock Island & Pacific Railroad. He issues the following order:

1st Div (Red),
PLEASANT RIDGE CHURCH, MO.,
15 Jan 20, 1:00 PM.

FIELD ORDERS
No 14

Maps: Geological Survey, 1:62500.

Troops:

(a) Rear guard
Gen B
2d Brig
1st FA Brig (less 1st LA and 1 bn 3d HvA)
1st Engrs (less 2d Bn)
1st MG Bn
51st Regt CAC (railway)

(b) Covering Troops
Gen C
1st Brig
1st LA
1 bn 3d HvA
2d Bn 1st Engrs (less Co F)
1 amb co
Co A 1st Gas Regt

(c) Cavalry
Maj C
1st Sq 1st Cav

1. (a) Blue troops have crossed the MISSOURI RIVER and occupy the line south of FARLEY—LIBERTY. The 1st and 2d Blue Divs from west to east are in contact with this division and are supported by a Blue division in rear. About 2 brigs of heavy artillery have been seen moving to the front to reinforce the enemy's leading division facing us.

(b) The 1st Corps retires during the night to the line BEVERLY STATION—PLATTE CITY—co-ordinate 755, delaying the enemy's advance to our main position south of ST. JOSEPH.

(c) Our 2d Div is on our left.

2. (a) This division, with attached troops, retreats to and defends the line extending from BEVERLY STATION, north of the C. R. I. & P. R. R. through hill one mile southeast of HACKBERRY SCHOOL, following the railroad to vicinity of SETTLES STATION, where it connects with our 2d Div.

(b) Zone boundaries for this division:
West boundary: MISSOURI RIVER.
East boundary: co-ordinate 365.

3. (a) The rear guard will occupy tonight the line designated in par. 2, and will hold it. Extra crossings over BEE CREEK will be prepared.

(b) The covering troops, except outposts, will retire during the night to the line of the heights west of BEE CREEK from the MISSOURI to WOODRUFF; thence along west side of OWL CREEK

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to co-ordinate 762.5; thence east to a junction with 2d Division near 363.0—762.5. This line will be prepared for defense. The outposts will withdraw only when forced to do so, and will prevent hostile reconnaissance.

In the territory evacuated, Co A 1st Gas Regt will gas all roads in a belt three miles wide south of co-ordinate 748, the edges of woods opposite our rear guards, probable enemy observation posts, and the heights east of BEVERLY STATION.

Bridges will be destroyed, and roads obstructed.

(c) The cavalry will cover the right flank and delay any advance between LEAVENWORTH and the bluffs east of the river.

4. See Adm O No 11. SSW: near WOODRUFF.

5. (a) Axis of signal communications: Div: ELDORADO SCHOOL; WEST PLATTE; PLEASANT RIDGE CHURCH; COXE SCHOOL.

1st Brig: Same as for division.

2d Brig: QUINN SCHOOL; PLEASANT RIDGE CHURCH; same as division.

(b) Command Posts:

Div: PLEASANT RIDGE CHURCH.
1st Brig: PLEASANT RIDGE CHURCH.
2d Brig: QUINN SCHOOL.
1st FA Brig: QUINN SCHOOL.
Tns: PLEASANT RIDGE SCHOOL.

Distribution:

A,
Maj Gen.

A Pursuit

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

(Based on the same situation as the preceding discussion)

General Situation:

See page 987.

Special Situation (Blue):

The Blue 1st Corps at noon on January 15th is bivouacked in two lines, the 1st and 2d Divisions, from west to east, in first line and the 3d Division in corps reserve in second line. The outpost system extends from Horseshoe Lake through crossroads 907 and Union Chapel to B. M. 1002.

Troops crossed the Missouri River near Kansas City on the 14th and following night, and bivouacked. The corps and army artillery are moving into the first position on the afternoon of the 15th.

The Blues control the air.

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A Red force, identified as the 1st Division, moving south, halted yesterday just in front of the 1st Blue Corps. Two other Red divisions are in line to the east, confronting two Blue corps. Strong supporting Red forces are near St. Joseph—Cameron Junction.

The Blue army commander has indicated his intention to attack the Red forces in his immediate front on the 16th. He is of the opinion that, in view of the inferiority of the advanced Red forces and lack of time to prepare a defensive position, these Reds will retreat and avoid a serious engagement. The corps issued the following order for continuing the advance:

1st Corps (Blue),
North Kansas City,
15 Jan 20, 2:00 PM.

Field Orders
No 2

Maps: General Map, 1"=15 miles, Geological Survey, 1:62500.

1. (a) A Red force of three divisions in line marching south came into contact today with our army on the line Farley—Liberty, both held by the enemy. Red cavalry covers its left flank. The 1st Red Division is opposite this corps. Strong Red forces in rear on the line St. Joseph—Cameron Junction have given no indication of an intention to advance. The enemy in our immediate front appears to be a covering or a raiding force.
   (b) Our army advances tomorrow at 6:30 AM, driving the Red forces north.
   (c) The army artillery will assist the corps artillery in supporting the attack.
2. (a) This corps participates in the advance of the army.
   (b) Zone of action:
       Right boundary of corps: co-ordinate 365.
       Left boundary of corps: Missouri River.
   (c) Line of departure: Horseshoe Lake; road junction 771; road junction 920; point 365—740.
   (d) *Objectives*:
       First objective: Troops advance without delay to line Duck Lake; Eldorado School; hill ½ mile north of Morton School. Rate of advance, as prescribed by division commanders.
       Second objective: Beverly Station; C. R. I. & P. R. R. to co-ordinate 360; the Platte River.
       Third objective: Bee Creek; West Platte; Quinn School.
   (e) Advances to 2d and 3d objectives will be ordered by division commanders, who will notify each other and the corps chief of artillery of time and rate of advance.
   (f) Time of attack: 6:30 AM.
3. (a) An artillery preparation will commence at 5:30 AM; and neutralizations will precede the attacking troops, in accordance with the plan prepared by the Corps C of A. All division artillery will assist prior to 6:30 AM. Special support will be given the crossings of the Platte River.

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(b) The 3d Cav and one battery, 4th LA, under Colonel X, 3d Cav, which assembles today near WALDRON, will attack west of C. B. & Q. R. R. at foot of bluffs, and clean up the bend in the MISSOURI RIVER east of LEAVENWORTH.

(c) The 1st Div attacks between:
Right boundary: MOORE SCHOOL; due NW to the PLATTE RIVER; the PLATTE RIVER to 360—750; north on co-ordinate 360.
Left boundary: C. B. & Q. R. R. at foot of bluffs.

(d) The 2d Div attacks between:
Right boundary: Same as right boundary, 1st Corps.
Left boundary: Same as right boundary, 1st Div.

(e) The 3d Div follows in rear of 2d Div in corps zone to just south of co-ordinate 737.

(f) The corps air service will patrol constantly at low altitudes to discover enemy movements.

(x) Should the enemy offer only slight resistance, pursuit will be pushed by tanks and cavalry and all available troops promptly and without limit.

4. See Adm O No —.

5. (a) Axes of signal communications:
1st Div: WALDRON; ELDORADO SCHOOL; WEST PLATTE; PLEASANT RIDGE CHURCH.
2d Div: MOORE SCHOOL; MORTON SCHOOL; PLATTE CITY; WOODRUFF.
3d Cav: WALDRON; BUXTON; BEVERLY STATION.
1st Corps: NORTH KANSAS CITY; FARLEY; WEST PLATTE.

(b) Command posts:
1st Div: WALDRON.
2d Div: MOORE SCHOOL.
3d Cav: WALDRON.
3d Div: NORTH KANSAS CITY.
1st Corps: NORTH KANSAS CITY.

X,
Maj Gen.

Official
G
Asst C of S G3

A message was received also from corps headquarters announcing that Light Tank Companies A and B, 1st Tank Battalion, were attached to the 1st Division and would join after dark; also that the corps would furnish bridge material sufficient for four bridges across the Platte River.

The weather is freezing at night. Rivers contain many ice cakes, but are not frozen over.

General Y received the corps order for the advance at 3:00 PM on the 15th. His troops arrived by noon on the line now held, and are in contact with the hostile outposts.

There is no information of importance concerning the enemy's disposition not covered in the corps order. The enemy's outposts occupy the line Horseshoe Lake—cross-roads 907—Union Chapel—B. M. 1002, effectually preclud-

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ing a reconnaissance of the important crossings over the Platte River. Some, but not much, of the enemy's artillery is firing, and there is nothing to indicate aggressive action. General Y's artillery is in position south of Moore School.

Required:

General Y's estimate of the situation, and his orders for the 16th.

DISCUSSION

The Red force opposite the 1st Blue Corps consists of one division. How much of this division is opposite General Y is unknown but probably does not greatly exceed one-half. The troops have just arrived on the ground now held by them, and have had no time to fortify. It is doubtful if the Reds, in their advance through hostile territory, have been able to bring forward barbed wire, and it is possible that General Y will encounter none in his advance tomorrow.

In view of the Blue superiority in numbers, it is improbable that the Reds will risk a small force in a serious engagement in a position far advanced from their main forces near St. Joseph. If the advanced Red troops are a covering force, they naturally would attempt to delay a Blue force a considerable time; if they are a raiding force, a lesser time, sufficient only to remove or destroy material and stores in the territory occupied by them.

In General Y's zone of advance, positions which the enemy might defend to delay his advance are:

(a) The Platte River, near Farley.
(b) East and west ridge line through road junctions 923 and 968.
(c) Just north of Chicago, Rock Island & Pacific Railroad.
(d) Bee Creek, in connection with an east and west ridge line east of that creek.

The first of these lines is an important one, for even without any resistance, special preparations must be made for crossing this stream, and it must be expected that the enemy will destroy all bridges. It is very unfortunate that the Reds secured the approaches to this river, precluding an opportunity to bring bridge material close up to it.

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Line (b) and (c) offer in themselves no special obstacles to an advance. Bee Creek should be passable for infantry at all places, and it hardly will be necessary for mounted troops or trains to cross it during the day of attack, even if it is secured. If the latter occurs, darkness later will afford an opportunity to prepare crossings. Outside of the natural obstacles, it must be expected that the enemy will seek to delay our troops by destroying bridges, burning towns, felling trees across roads, and by road mines.

The enemy undoubtedly will have a rear guard. As it is known that the Red cavalry is to the east, the rear guard probably will consist largely of machine guns and artillery, prepared to fight delaying actions on one or more of the lines considered.

To meet this hostile force, General Y has a full division assisted by corps and army troops. It is evidently to his advantage to push forward as rapidly as possible and reduce the time available to the enemy to prepare positions suitable for delaying actions.

The front allotted the division varies from two miles at the commencement of the advance to over five miles near the Chicago, Rock Island & Pacific Railroad. As the start of the advance may be the most difficult, the front is not too small. Preparations for crossing the Platte River must be started at once. The division engineer is charged with this duty, but should consult commanders concerned, and should ask for materials from the corps engineer park. He needs as much advance notice as possible. As the army commander has expressed an intention to continue his advance, it is not unreasonable to assume that preparatory measures already have been taken by the division engineer to have men and material assembled well to the front.

After crossing the Platte River, the course of events cannot be foretold but the advance must be pushed rapidly, halting at the objective lines only if serious resistance is encountered, necessitating a formal attack. The corps order does not require a halt at objectives, but permits division commanders to advance without a halt, or after such delay as they may determine to be advisable. Engineers in all probability will be needed to clear roads and remove obstacles.

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An advance on a broad front always is desirable in a pursuit. The front in this case is limited, but the principle indicates a deployment with both infantry brigades in line, and each brigade with two regiments in line.

Since the enemy hardly will attempt to defend the territory southeast of the Platte River, a single battalion in line in each regiment should be sufficient until the Platte River is crossed. Later the deployment within brigades will depend on circumstances, and can be left to brigade commanders. The tanks allotted the division should be useful in a pursuit after the Platte River is crossed.

In a pursuit, reserves ordinarily are not needed to further the attack. The enemy resistance should be met by vigorous attacks promptly made by front waves; and positions, not extensive but obviously strongly held, should be passed around by the first lines in an effort to reach the main forces and trains beyond. Points passed then may be dealt with by the reserves attacking or neutralizing them. Two battalions and the division machine gun battalion should be sufficient provisionally as reserves. As neither the enemy nor ourselves can make flank attacks between the Missouri and Platte Rivers, the reserve, if in rear of the center, will be in position to reinforce any part of the front line.

The division artillery has been ordered to assist in an artillery preparation for an hour preceding the attack, in co-operation with the corps and army artillery. Presumably this will consist in neutralization and interdiction fire. After H hour the division artillery is left to the division, but the corps and army artillery continues its preparation in advance of the attacking infantry by successive neutralizations. It is necessary to keep the corps artillery command post informed of the position and rate of advance of the troops.

The first position likely to be held by the enemy is the heights just north of Farley. It is important to us that enemy fire on troops preparing crossings over the Platte River shall be stopped quickly, and this can be done by standing barrages or concentrations. A rolling barrage prior to crossing the Platte River appears unnecessary, in view of the unlikelihood of the enemy making a serious resistance southwest of that stream. The one hour artillery

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preparation should be ample to permit driving back the enemy's outposts.

The action of the division artillery after the Platte River is crossed cannot be foreseen. It can support the infantry advance by fire for a short distance further. Changing position forward as far as the Platte River probably will not be difficult, but movements beyond this will depend on the condition of the roads. It is desirable that artillery be pushed well to the front, and some batteries should be ready to advance as soon as the crossing of the Platte River is assured; but no artillery in quantity should be moved across the river until reconnaissance shows routes to be available.

General A decides to attack, forcing a crossing of the Platte River and pushing boldly forward. He issues the following order:

1st Div,
WALDRON, Mo.,
15 Jan 20, 8:30 PM.

FIELD ORDERS
No 6

Maps: Geological Survey, 1:62500.

1. (a) A Red force of three divisions in line marching south is halted before our army just south of the line FARLEY—LIBERTY. The Red cavalry covers the enemy's flank About one-half of the 1st Red Division is opposite our division. Other strong Red forces are halted on the line ST. JOSEPH—CAMERON JUNCTION. The enemy in front of this army appears to be either a covering or a raiding force.
   (b) Our 2d Div is on our right, and the 3d Cav with a battery on our left.
   (c) Our entire army advances tomorrow driving the enemy north.
   (d) The corps and army artillery assist in the preparation and support during the attack.
2. (a) This division attacks at 6:30 AM, forces a crossing of the PLATTE RIVER, and drives north.
   (b) *Objectives*:
   1st objective: DUCK LAKE—ELDORADO SCHOOL.
   2d objective: BEVERLEY STATION—C. R. I. & P. R. R.
   (c) Zone of action:
   Right boundary of division: MOORE SCHOOL; due NNW to PLATTE RIVER; along PLATTE RIVER to 360—750; co-ordinate 360.
   Left boundary of division: C. B. & Q. R. R. at foot of bluffs.
   (d) Boundary between brigades: Foot of bluffs to bridge 769, over PLATTE RIVER, to right brigade; due NNW to co-ordinate 357.5; thence north on co-ordinate 357.5.
   (e) Line of departure: HORSESHOE LAKE; road junction 771, ½ mile east of HORSESHOE LAKE; thence following road east.
3. (a) The 1st Brig (less 1 bn), with 1st Engrs (less 1st Bn) and Co A 1st Light Tank Bn attached, attacks with two regiments in line. The 1st Brig will assist the 2d Brig to capture FARLEY by fire from the hills east of the PLATTE.

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(b) The 2d Brig ((less 1 bn), with 1st Bn Engrs and Co B 1st Light Tank Bn attached, attacks with two regiments in line. The 2d Brig will drive hard with its left and seize FARLEY. After seizing the heights north of FARLEY the 2d Brig will assist the 1st Brig in the capture of the heights north northeast of FARLEY.

(c) *Artillery.* (1) From 5:30 AM to 6:30 AM, the division artillery will participate in an artillery preparation, under the direction of the corps chief of artillery. After 6:30 AM, it will support the crossing of the PLATTE RIVER, until the heights on the north bank are secured.

(2) One light battery will be attached to each brigade as soon as the crossing of the PLATTE RIVER is secured. All artillery will advance beyond the river as soon as routes and positions can be reconnoitered; and be prepared to support attacks on hostile positions up to the C. R. I. & P. R. R.

(3) The 1st LA will support the 1st Brig; and the 2d LA the 2d Brig.

(d) *Division Reserve*: One bn each from the 1st and 2d Brigs, and the 1st MG Bn, under Lt Col G, 3d Inf, will form under cover east of RJ 767 by H hour and await orders.

(x) (1) Rate of advance to the PLATTE RIVER: 100 yards in 3 minutes.

(2) The PLATTE RIVER will be crossed rapidly and the heights on the north side seized. The 1st Brig and 2d Brig each will throw two bridges over the PLATTE RIVER promptly.

(3) When the heights north of the PLATTE RIVER are secured brigade commanders will continue the advance to 1st obective at rate of 100 yards in 4 minutes.

(4) Advance will be delayed 30 minutes on the 1st objective for reorganization and reconnaissance. Advance to the 2d objective will be 100 yards in four minutes. Advance will be delayed 45 minutes on the 2d objective.

(5) Should the enemy offer little resistance, pursuit by tanks and all available troops will be pushed forward rapidly and without limit.

4. See Administrative Orders No 10 (omitted).
Station for Slightly Wounded: near north exit of WALDRON.

5. (a) Axis of signal communications:
Division: WALDRON; ELDORADO SCHOOL; WEST PLATTE; PLEASANT RIDGE CHURCH.
1st Brig: MOORE SCHOOL; crossroads 822; crossroads 857 (358—743) crossroads 929; WEST PLATTE; WOODRUFF.
2d Brig: WALDRON; FARLEY; EAST LEAVENWORTH; crossroads 964, ½ mile W of ELDORADO SCHOOL; crossroads 917; HAZELWOOD SCHOOL; WESTON; COXE SCHOOL.
1st FA Brig: Same as for div.

(b) Command Posts:
Division: WALDRON.
1st Brig: MOORE SCHOOL.
2d Brig: WALDRON.
1st FA Brig: WALDRON.
Div reserve: RJ 767.

Y,
Maj Gen.

Official
R S T
Asst C of S G3

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A Retreat

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

(Based on the same situation as the two discussions preceding)

General Situation:

See pages 987 and 996.

On the afternoon of January 16th, the Blues reached the first defensive position held by the 1st Red Division, following generally the Chicago, Rock Island & Pacific Railroad. Due to demolitions, gassing of roads and areas, and delays caused by the retiring Red outposts, the Blues did not reach this position until too late to attack.

On January 17th, an attack was delivered by the Blues in the morning, and failed; but a second attack made in the afternoon with heavy forces made progress; and at 5:00 PM, when approaching darkness ended the fighting, the Red line was along the west side of Bee Creek, from the Missouri River to West Platte, thence following generally the road to Tracy, thence on the south side of the Platte River.

Special Situation (Red):

On January 16th, the Red corps commander announced that the third defensive position would be from Platte Valley School; Coxe School; north side of Bonnell Branch; Elm Grove School; the 1st Division to hold that part of the position west of Bee Creek.

The 1st Red Division sustained negligible losses on the 16th, but on the 17th, the losses amounted to about 2,000, including several hundred cut off and probably captured on the hill about one and one-half miles southeast of Hackberry School. On the other hand, a hostile division attempting to cross the Platte River near Platte City had failed in its attacks. A second hostile division, attacking between Bee Creek and the Platte River, had advanced about two miles, but only after earlier attacks had failed with severe losses. All the Red artillery had been in action, the railway regiment having two battalions near Woodruff and one bat-

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talion northwest of Weston. The 1st Squadron, 1st Cavalry, had fallen back to just north of Beverly.

Some machine guns had been lost, but no other material of importance. On the other hand, the Reds had captured about 300 prisoners, and had identified the order of battle of the entire 1st Blue Corps opposite them. The prisoners reported that the gassing of roads had interfered seriously with the supply arrangements of the Blues, and had caused the Blue artillery to be short of ammunition at times.

The Blues had concentrated their artillery fire on the Red position, and there had been but little firing in back areas, so that the roads were in fair condition and railroads were operating.

At 7:00 PM on the 16th, General A, commanding the 1st Red Division, received telegraphic instructions to withdraw that night to the second defensive position, the 1st Division to hold that part of it extending from the Missouri River to 363.0—762.50. This line, already selected by General A, extended from the Missouri River, following the west side of Bee Creek to near Woodruff, thence along the west side of Owl Creek to co-ordinate 762.50; thence east along the ridge to crossroads 968, where connection was made with the 2d Division. This position had been occupied (see page 996) since the morning of the 16th by a detachment under General C consisting of:

1st Brigade.
1st Light Artillery.
1 battalion, 3d Heavy Artillery.
2d Battalion, 1st Engineers (less Company F).

Company A, 1st Gas Regiment, originally with General C's detachment, had been withdrawn and placed in division reserve. All of the artillery of this detachment had been in action on the 17th, as had also that part of the infantry on the right of the line. The latter had not been attacked seriously, probably due to the gassing of the heights just east of Beverly Station and to the enemy concentrating his efforts on his attack further east.

Required:

A brief estimate of the situation, and General A's order for the next day, January 18th.

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DISCUSSION

General A knows that the enemy in his front outnumbers him three to one, but that two of the divisions opposing him suffered severely on the 17th and one of these two divisions is still south of the Platte River. It hardly seems possible that either of the divisions can renew the attack before daylight. The enemy has a third division in rear, but if it replaces a front line division, even if preparations for doing so have been made, it can hardly attack earlier. General A therefore can be reasonably certain of having the night to make his new arrangements.

The enemy may interfere with the Red movements by interdiction and harassing artillery fire; but the expenditure of ammunition during the battle of the 17th, the difficulties reported by Blue prisoners in their service of supply due to gassing of roads and demolitions, and the probable natural desire of the Blues to employ any available ammunition for a new attack, should it become necessary to make one, probably will reduce harassing or interdiction fire to a minimum.

General A's principal concern is the defense of his new position. The weakest part of the line is the extreme right, which, if it gives way, would endanger seriously the entire position. It was because of the importance of this point that instructions were given on the 15th thoroughly to gas the heights east of Beverly Station. Ordinarily to place persistent gas as close to our own lines as 1,000 yards might be dangerous, if strong winds blew from the gassed region toward us. In this case, however, we have a deep valley which can be expected to catch most of this gas; moreover the wind at this season of the year is most likely to be from the north; so that there should be little danger to our own troops. The advantage of denying to the enemy the heights east of Beverly Station justifies the use of the gas and any slight danger therefrom to our own troops. The gassing on the 15th and night of the 15th-16th should be effective for some few days, but it may be renewed by the artillery.

Similarly, after the evacuation by the Red troops of the area east of Bee Creek, it will be possible to shell the areas

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between Bee Creek and the Platte River with persistent gas; and this is the easiest and a rapid means of creating obstacles in the foreground of a defensive and temporary position.

The center and left of the Red position will be easier to defend, as the enemy first must make some advance to reach it, through a new country, and subjected to cross fire. If the enemy's bridges over the Platte River can be located, they may be destroyed by artillery fire, and an advance over the Platte River delayed. It would be advisable to ask the corps air service to observe the Platte River, to secure early information as to points of crossing.

The new position to be defended has been occupied for two days, and new orders for its occupation are unnecessary. The details of the withdrawal of the present rear guard can be left to its commander, the division commander insuring that the roads leading to the rear are available for the retreating troops. It may be necessary to assign extra ambulances, trucks or teams to insure the saving of all wounded and materiel. Inquiry can be made of the corps as to what assistance of this nature can be supplied, and arrangements made accordingly.

The location of the railway artillery will have to be moved north from Woodruff, and probably also from Weston. The artillery brigade commander naturally would be charged with this, and presumably knowing that a withdrawal was contemplated, would make his arrangements accordingly.

General A decides to withdraw his present rear guard during the night, designating the present second line as a new rear guard, and preparing for defense the third position designated by the corps commander. He issues the following order:

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1st Div,
WOODRUFF, Mo.,
17 Jan 20, 8:00 PM.

FIELD ORDERS }
No 16 }

Maps: Geological Survey, 1:62500.

Troops:
(a) New rear guard
Gen C
1st Brig
1st FA Brig (less 2d LA and 3d HvA less 1 bn)
51st Regt CAC (railway)
2d Bn 1st Engrs (less Co F)
1st Sq 1st Cav

(b) Old rear guard
Gen D
2d Brig
2d LA
3d HvA (less 1 bn)
Co A 1st Gas Regt
1st Engrs (less 2d Bn)

1. (a) The 1st Blue Div attacked our rear guard between BEE CREEK and the PLATTE RIVER early today, and after initial failures and severe losses was stopped on the line southeast of BEE CREEK—WEST PLATTE (excl)—TRACY (incl). The 2d Blue Div attacked along the PLATTE RIVER between co-ordinates 362 and 364.5 but was no where able to cross the stream. The Blue attack was supported by corps and army artillery. The 3d Blue Div, completing the 1st Blue Corps, is in corps reserve. Enemy attacks on our left today made an average progress of about one mile.

(b) Our corps withdraws tonight to our second position, which will be held.

2. This division withdraws to and defends the line west side of BEE CREEK, from the MISSOURI RIVER to WOODRUFF; west side of OWL CREEK, from WOODRUFF to co-ordinate 762.50; thence east to connection with our 2d Div, near 363.0—762.5.

3. (a) The new rear guard defends the position described in paragraph 2 now held by it. It will destroy the crossings over BEE CREEK, upon the withdrawal of troops now in its front. The right of the line will be strongly held against all attacks. The artillery in rear positions is available for support when useful. Hostile territory will be gassed by the artillery. The cavalry will prevent hostile reconnaissance.

(b) The old rear guard will withdraw at once to the line PLATTE VALLEY SCHOOL—COXE SCHOOL—BURRUS SCHOOL—road junction 1020, 2,000 yds north of SWAMP SCHOOL. All wounded and material will be brought in. Such artillery fire as can be delivered from the new position will support the new rear guard.

4. Administration and Supply: See Adm O No 12 (omitted).
Station for slightly wounded: WESTON.

5. (a) Axis of signal communications: WOODRUFF; PLEASANT RIDGE CHURCH; COXE SCHOOL; DYE; MT. BETHEL CHURCH.

(b) Command posts: Changes effective at 10:00 PM.
1st Div: Change to COXE SCHOOL.
1st Brig (new rear guard): Remains at PLEASANT RIDGE CHURCH.
2d Brig (old rear guard): Change to DYE.
Tns: Change to COXE SCHOOL.

A,
Maj Gen.

Official
O
Asst C of S G3

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A Pursuit

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

(Based on the same situation as the three discussions preceding)

General Situation:

See pages 997, 998 and 1003.

Special Situation (Blue):

The advance of the 1st Blue Division on January 16th, followed by the unsuccessful attack on the morning of the 17th, and the final successful attack of the afternoon of the 17th, found the division front line disorganized and at dark, about 5:00 PM, believed to be in the vicinity of the West Platte—Tracy road. A severe enfilade fire of infantry and artillery was coming from the west side of Bee Creek. Enemy artillery was reacting strongly.

All roads between co-ordinates 743 and 748 and east of the Chicago, Burlington & Quincy Railroad had been gassed with persistent gas. Road mines and felled trees assisted in making these roads temporarily unusable. The heights and woods east of Beverly Station were heavily gassed, as were some small areas on tops of hills and edges of woods facing the original Blue position.

About 300 prisoners had been captured. From them it had been ascertained that the troops facing the 1st Blue Division were a part of the 1st Red Division. This division also covered the front to the east, attacked on the 17th by the 2d Blue Division, which had failed to cross the Platte. The prisoners also stated that only about one-half of the 1st Red Division had been in action, all the infantry prisoners coming from the same brigade. The prisoners reported another defensive position to the rear, but stated they had no orders to retire; and they were uncertain as to the location of the second position, which none of them had seen. About 250 Red dead were reported as being within the present Blue lines.

In addition to the Red division artillery, about two or three battalions of 8-inch guns were firing heavily, and were effective in interrupting communications. The Blue air service, still in control of the air, reported these heavy

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guns beyond Weston and Woodruff; but due to the obstructed roads and consequent difficulty of bringing up supplies, sufficient ammunition was not yet available for effective counter-battery action.

The Blue losses were not known. About 400 wounded had reached dressing stations, with large numbers uncollected on the field. The infantry was deployed with all four regiments in line.

At 5:00 PM General Y, commanding the 1st Blue Division, received the following order from corps headquarters:

1st Corps,
NORTH KANSAS CITY,
17 Jan 20, 4:00 PM.

FIELD ORDERS
No 4

Maps: Geological Survey, 1:62500.

1. (a) Our army today attacked the Red corps in our front with uniform success. Our 1st Div is advancing between BEE CREEK and the PLATTE RIVER.
   (b) The strong enemy forces on the line ST. JOSEPH—CAMERON JUNCTION show no sign of advancing. The Red corps in our front is reported by the Air Service as evacuating large quantities of supplies to the north.
   (c) The 1st Army continues to attack tomorrow, breaking the enemy's resistance and pursuing north.
2. (a) This corps advances tomorrow at 7:00 AM.
   (b) Zones of action, effective 6:00 AM, 18 Jan:
   3d Div: MISSOURI RIVER to co-ordinate 355.50.
   1st Div: Co-ordinate 355.50 to 360.
   2d Div: Co-ordinate 360 to 365.
3. (a) The 3d Div moves tonight, infantry in trucks, to vicinity of DUCK LAKE.
   (b) Prior to H hour the corps and army artillery will fire on selected hostile positions. Divisions will communicate direct to corps C of A any points they wish bombarded, and later any artillery assistance desired.
   (c) The 3d Cav will assemble near EAST LEAVENWORTH in corps reserve. The battery, 4th LA, now with the 3d Cav is returned to the disposition of the 2d Div.
4. See Adm O No 22.
5. (a) Axes of signal communications:
   1st Corps, 1st and 2d Divs: No change.
   3d Div: STILLINGS; WESTON.
   (b) Command posts:
   1st Corps: Changes to WALDRON at 11:59 PM.
   1st Div: FARLEY.
   2d Div: LANTER SCHOOL.
   3d Div: STILLINGS.

X,
Maj Gen.

Official
G
Asst C of S G3

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Required:

A brief estimate of the situation and General Y's orders for the 18th.

Discussion

Whatever General Y's decision, it is advisable that it be made early and that the necessary orders be issued promptly. In this manner the confusion existing can be remedied in accordance with the new operations proposed.

It is unlikely that new information of great importance will come in during the night. The enemy forces are identified, their condition can be determined from reports on hand, and the positions and condition of our own troops in general are known.

The information in the corps order as to Red forces near St. Joseph not marching south, together with the known inferior strength of the enemy immediately in front of the Blue army, and the fact that the latter is evacuating stores to their rear, indicate an intention to retreat. But the determined fight made on the 17th, with the news that a new defensive position is in rear, indicates there will be no retreat unless necessary.

General Y's mission is to force a retreat of the Reds faster than they desire, and if possible to destroy their defense by piercing it, enabling at least a part of the Red force to be enveloped and captured.

It would be important to know the location of the next Red defensive line. One on the west side of Bee Creek has been discovered. This may be a switch line and not the main defense line, but in any case apparently may have to be forced. What defensive lines, if any, exist in rear of Bee Creek is not known; but they cannot be of a formidable nature. Naturally the sooner they are attacked the less formidable they are likely to be. At present the Bee Creek line and what remains of the enemy along the line West Platte—Tracy is what immediately confronts General Y, and the breaking of this line is the first problem. From the number of dead found on the field, 250, the enemy appears to have lost about 1,000 killed and wounded, besides 300 prisoners captured. Many more may have been lost, but there

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can be no certainty as to the number. The enemy is likely to be found in strength tomorrow.

The hostile position is still within range of the corps and army artillery, which are south of the roads blocked by the retreating enemy. General Y's artillery is north of this line, but its ammunition supply is handicapped by inability to use the roads over a considerable distance. It is advisable after today's action not to require the divisional artillery to fire during the fight or engage in an artillery preparation, if it can be avoided. Better conserve what ammunition can be gotten across the gassed and obstructed belt for tomorrow's fight, and let the corps and army artillery during the night engage in such harassing and interdiction fire and conduct such artillery preparation in the morning as their position and ammunition supply permit. The corps authorizes General Y to communicate directly in such matters with its chief of artillery. It will be sufficient to notify the latter of the position of the enemy's lines and our own lines, and of the particular places, if any, on which fire is desired, the information furnished being corrected later as necessary.

General Y's troops need as much rest during the night as practicable, and for this reason changes in the order of battle are undesirable. Any changes made at night would in addition complicate the supply of rations and ammunition, which will be difficult enough in any case. The direction and time of attack has been fixed by the corps commander, it being left to General Y to decide on the objectives and the strength of the attacking lines.

There can be no question that, on the left of the division sector, the first objective is the crossings of Bee Creek and the capture of the heights on the far side in the vicinity of Hazelwood School. An advance beyond this point depends upon whether supporting troops on the right and left are up, and whether the enemy's resistance is broken. The front of these heights is about one-half of the division zone, and suitable for a brigade attack. The brigade commander, who should be well to the front, can be given authority to decide, after he has seized this front objective, whether temporarily to assist troops on his flank by action to the right or left, or push straight forward.

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The remainder of the division sector, which will be between co-ordinates 357.50 and 360 must be left to the other brigade. Any advance of this brigade without an advance of the 2d Division on its right is liable to expose the former to counter-attacks and destructive enfilade fire from the direction of Quinn School. The 2d Division so far has failed to cross the Platte River, and there can be no certainty at this time that it will do so early in the morning. The crossing, even if unopposed, is liable to be slow. Not to advance, however, would give the enemy more opportunity to delay the 2d Division, whose advance should be facilitated by the 1st Division on its left.

The danger of possible attacks on the right flank can be met by placing the reserve in rear of the right of the division, ready to operate promptly to the northeast. This is the more practicable, as the left of the division is bound to receive strong support from the 3d Division on its left, which at first will have a narrow front for its attack and can be expected to have strong reserves on its right. The inferior strength of the enemy, the obstacle of Bee Creek, the enemy's gassing of the heights east of Beverly Station, and the location of the enemy's right at the mouth of Bee Creek and the Missouri River make it unlikely that a hostile counter-attack will be made in this area.

General Y's decision is to attack vigorously with four regiments in line, to maintain a strong reserve in rear of his right, and to omit any artillery preparation other than what can be obtained from the corps chief of artillery. He issued the following orders:

1st Div,
356.50—748.45,
17 Jan 20, 6:30 PM.

FIELD ORDERS
No 8

Maps: Geological Survey, 1:62500.

1. (a) Our army today attacked the Red corps in our front with uniform success. This division penetrated the enemy's positions to a depth of over 3,000 yards, capturing 300 prisoners. Our front line is now along BEE CREEK from the MISSOURI RIVER to WEST PLATTE, thence following generally road to TRACY, exclusive.

(b) Enemy forces on the line ST. JOSEPH—CAMERON JUNCTION are not advancing south; but the Red troops in our front are evacuating supplies north.

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(c) This army continues its attack tomorrow, breaking the enemy's resistance and pursuing north.
(d) The 2d Div on our right and the 3d Div on our left participate in this advance.
(e) Effective 6:00 AM, 18 Jan, the 3d Div takes over all of our present sector west of 355.50.

2. (a) This division advances tomorrow at 7:00 AM.
(b) Zone of action: Between co-ordinates 355.50 and 360.

3. (a) The 2d Brig (less 1 bn), with Co B 1st L Tank Bn attached, crosses BEE CREEK and seizes the heights north and northeast of HAZELWOOD SCHOOL. It will advance beyond this objective upon orders of its brigade commander. Zone of action: Between co-ordinates 355.50 and 357.50.
(b) The 1st Brig (less 1 bn), with Co A 1st L Tank Bn attached, clears the east bank of BEE CREEK as far as the 823—978—1000 road. This brigade will not delay its advance on account of the 2d Div on our right. It will advance beyond the objective given on orders of its commander. Zone of action: between co-ordinates 357.50 and 360.
(c) *Reserve*: One battalion from each brigade, and the 1st MG Bn under Lt Col H, 3d Inf, whose command post is now near HACKBERRY SCHOOL, will be in woods NW of crossroads 929, ⅝ miles east of HACKBERRY SCHOOL, at 7:00 AM, and will cover the right of the division against hostile counter-attacks.
(d) The division artillery supports our advance; and will push batteries forward as soon as routes are cleared. There will be no artillery preparation before the attack, or harassing and interdiction fire during the night other than that by the corps and army artillery. One light battery will be attached to each brigade to accompany its advance. The 1st LA supports the 1st Brig, and the 2d LA the 2d Brig.

4. See Adm O No 12.
Station for slightly wounded, near crossroads 964, ½ mile W of ELDORADO SCHOOL.

5. (a) Axes of signal communications:
1st Div: FARLEY—356.50—748.45; WEST PLATTE; PLEASANT RIDGE CHURCH.
1st Brig: Crossroads 929, ⅝ mile E of HACKBERRY SCHOOL; road junction 861, ⅝ mile E of WEST PLATTE; WOODRUFF.
2d Brig: Crossroads 917, ½ mile W of HACKBERRY SCHOOL; HAZELWOOD SCHOOL; PLEASANT RIDGE CHURCH.
1st FA Brig: Same as for division.
(b) Command posts:
1st Div: 356.50—748.45. (Rear echelon: FARLEY.)
1st Brig: ¼ mile S of crossroads 929, ⅝ mile E of HACKBERRY SCHOOL.
2d Brig: 356.53—751.35.
1st FA Brig: Same as 1st Div.
Reserve: 356.55—752.50 (400 yds NE of crossroads 929).

X,
Maj Gen.

Official
R S T
Asst C of S G3.

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General Y also sent the following message:

1st Div,
17 Jan 20, 6:40 PM.

Corps C of A:

Enemy holds heights west side of BEE CREEK. Request artillery preparation on these heights as far north as HAZELWOOD CHURCH before my attack at 7:00 AM tomorrow. Enemy line east of BEE CREEK not yet determined. Our artillery fires only after 7:00 AM, account difficulty securing ammunition.

Y,
Maj Gen.

Map Problem—A Pursuit

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

General Situation:

General Map and Pennsylvania Geological Survey, 1:62500, Gettysburg and Taneytown Quadrangles.

A Blue force invading the United States, captured Washington and Baltimore, and moved north. They were stopped by the Reds on the line north bank of Silver Run; west from Green Valley School; Bridgeport.

Special Situation:

On June 5 the 2d Blue Corps, with the 9th, 12th and 11th Divisions in line from east to west, broke through the Red line. The 1st Blue Corps was on its right, and the 3d Blue Corps on its left.

The attack was continued on June 6th. The 2d Corps was given the mission of penetrating the last and only partly organized Red position between Whitehall and Round Top. The corps zone was:

West Boundary:	*East Boundary*:
Road junction 568 (355-739).	Georgetown, inclusive.
East of Wolf Hill.	Littlestown, exclusive.
West of Goodintent S. H.	Whitehall, exclusive.
	St. Luke's Church, exclusive.
	Guldens, inclusive.

The 9th Division was ordered to seize the high ground between Granite Hill and Guldens.

The 9th Division attacked with the 17th Brigade on the left and the 18th Brigade on the right. One platoon, Company A, 1st Light Tank Battalion, was attached to the 17th

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Brigade, and one platoon, Company B, 2d Heavy Tank Battalion, was attached to the 18th Brigade.

On June 6, 1919, the attack of the 2d Corps progressed as ordered in 2d Corps field orders.

At 12:00 noon of that day, the situation was as follows:

The 9th Division attacking line is just starting on the assault of the high ground between Granite Hill and Guldens. The 1st Battalions of the 33d and 36th Infantry, reserves for 17th and 18th Brigades, are respectively in ravine near crossroads 562 (358—751.5), and 1,300 yards east of crossroads 562. The division reserve, the 2d Battalions of the 34th and 35th Infantry, is near road junction 572. All other infantry and machine gun troops are engaged, including the tank platoons. The front line units are reported as having received severe losses.

The artillery is all in action, the 25th Light Artillery near Whitehall; 26th Light Artillery north of Ashgrove School; and the 27th Heavy Artillery north of Oakgrove School.

At this time, General A, commanding the 9th Division, had received the following order:

2d Corps,
KINGSDALE,
6 June 19, 11:40 AM.

FIELD ORDERS }
No 14 }

Maps: Geological Survey, 1:62500.

1. (a) We are driving the enemy north. The 9th Division is approaching the high ground between GULDENS and GRANITE HILL. The enemy is retreating in disorder before it, and large captures of guns and prisoners have been made. The 12th Division is approaching GRANITE HILL. The 11th Division is advancing northeast of WOLF HILL.
   (b) The 3d Corps on our left reports the enemy evacuating GETTYSBURG and vicinity. Our air service reports enemy artillery and trains in our front retreating north along roads and across country.
   (c) The 1st Corps on our right is held up along the line road junction 612, ½ mile north of SQUARE CORNER—EDGEGROVE (inclusive). Hostile reinforcements have arrived at BERLIN JUNCTION.

2. This corps pursues at once toward YORK SPRINGS.
   Zone of Action:
      Right boundary: GULDENS—NEWCHESTER—HAMPTON—BERMUDIAN CHURCHES (all inclusive).
      Left boundary: GOODINTENT SCHOOL—GOODINTENT MILLS (both inclusive).

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3. (a) The 3d and 4th Cavalry, under General C, have been ordered to proceed at once from near GERMANTOWN through the gap between our right and the left of the 1st Corps, and across the CONEWAGO to block the enemy's lines of retreat.

(b) The corps artillery will push guns forward at once to fire on crossings of the CONEWAGO and interfere with hostile retirement across that stream. It will also prepare to cover our right flank, and support the 10th Division as in paragraph 3 (e).

(c) The air service will harass the enemy's retreat by bombing and machine gunning his troops, and will keep close touch with the positions of our troops and the enemy.

(d) The 9th, 12th and 11th Divisions pursue vigorously with all available troops. Full use will be made of tanks and artillery to harass the enemy's retreat and prevent him from making a stand. Infantry will be pushed forward and will attack any position held by the enemy.

Zones of Action:

Right boundary, 9th Division: GULDENS—NEWCHESTER—HAMPTON—BERMUDIAN CHURCHES (all inclusive).

Boundary between 9th and 12th Divisions: GRANITE HILL (to 12th Div)—ROUND HILL (to 9th Div)—crossroads 523.

Boundary between 12th and 11th Divisions: HUNTERSTOWN—BELMONT SCHOOL—WILTS SCHOOL (all to 12th Division).

Left boundary 11th Division: GOODINTENT SCHOOL—GOODINTENT MILLS (both inclusive).

(e) The 10th Division has been ordered to a position in readiness in the area MORITZ SCHOOL—BRUSH RUN—CEDAR RIDGE; to march or attack north or east. It will watch the enemy toward NEW OXFORD and BERLIN JUNCTION.

The 10th Field Artillery Brigade is relieved from its present duty and reverts to the 10th Division.

4. Administrative changes will be announced later.

5. (a) Axes of signal communications:

9th Division extended:
GULDENS—NEWCHESTER—HAMPTON.

12th Division extended:
GRANITE HILL—HUNTERSTOWN—BELMONT SCHOOL—BOULDER—WILTS SCHOOL—YORK SPRINGS.

11th Division extended:
Crossroads 588—crossroads 549—PLAINVIEW—HEIDLERSBURG—GOODINTENT MILLS.

(b) Command posts: No change.

B,
Major General.

Official:
I,
Asst C of S, G3.

Required:

(1) General A's decision.

(2) General A's orders.

NOTE:—Command post of 9th Division is at Littlestown.

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An Approved Solution

First Requirement:

General A's Decision

1. To consolidate the brigade and division reserves with the tanks and some field artillery and machine guns into provisional commands; to undertake the pursuit at once of the retreating hostile forces within the division zone; to drive them into the Conewago; and, with the assistance of the cavalry sent out by the corps, to surround them.

2. To have the two infantry brigades (less two battalions each) continue to act with fire action against the retreating hostile forces; and then to assemble in a position of readiness, ready to follow the forces in pursuit.

Second Requirement:

General A's Orders

9th Div,
Littlestown,
6 June 19, 12:20 PM.

Field Orders
No 25

Maps: 1:62500.

Troops

(a) Right Column
Col M
1st Bn 36th Inf
1 bn 25th LA

(b) Left Column
Lt Col K
1st Bn 33d Inf
1 bn 26th LA

(c) Reserve
Lt Col I
2d Bn 34th Inf
2d Bn 35th Inf
1 bn 27th HvA
1 co 9th Engrs
25th MG Bn

1. (a) This division is driving the enemy north. Our advance lines are now reaching the high ground between Guldens and Granite Hill. The air service reports hostile trains and artillery retreating north along roads and across country. Large captures of guns and prisoners have been made, and the enemy is now offering little resistance.

(b) The 12th and 11th Divs on our left are advancing between Granite Hill and Wolf Hill.

(c) The 1st Corps on our right is held up along the line road junction 612, one-half mile north of Square Corner — Edgegrove (inclusive). Hostile reinforcements have arrived at Berlin Junction.

(d) Our corps pursues at once toward York Springs, our division on the right, and the 12th and 11th Divs on the left. The 3d and 4th Cav under General

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(d) Tanks
Capt T K
1 plat Co A 1st L Tank Bn
1 plat Co B 2d Hv Tank Bn

C have started from near GERMANTOWN between our right and the left of the 1st Corps to cross the CONEWAGO to block the enemy lines of retreat. The corps artillery is pushing guns forward to fire on crossings of the CONEWAGO. The 10th Div is moving from vicinity of GERMANTOWN to the area MORITZ SCHOOL—BRUSH RUN—CEDAR RIDGE, in readiness to march or attack north or east.

2. (a) This division pursues at once toward BERMUDIAN CHURCHES, driving the enemy into the CONEWAGO and against our cavalry.
(b) Zone of action:
Right boundary:
GULDENS—NEWCHESTER—HAMPTON — BERMUDIAN CHURCHES (all inclusive).
Left boundary:
GRANITE HILL (exclusive)—ROUND HILL (inclusive) —crossroads 523.
Line of departure: From present position of troops.

3. (a) The right column pursues via MORITZ SCHOOL toward NEWCHESTER seizing the high ground in the vicinity of that point.
(b) The left column pursues via GULDENS toward PINE CHURCH and seizes the high ground in the vicinity of that point.
(c) The reserve marches provisionally to vicinity of crossroads 530. The line of the SOUTH BRANCH CONEWAGO will be observed.
(d) Tanks will pursue vigorously within the division zone, cooperating with the right and left columns.
(e) The 17th and 18th Brigs (less 2 bns each) will pursue the enemy's forces by fire until masked by the advance of the troops mentioned in the preceding paragraphs, and then will assemble respectively in the vicinity of road junction 596, 1,000 yds NW of MORITZ SCHOOL and at crossroads 506, 750 yds NE of MORITZ SCHOOL.
(f) The 1st FA Brig (less 3 bns) will continue to fire on retreating enemy's forces as long as within range and then will advance to positions in readiness in the general vicinity of the HUNTERSTOWN—BRUSH RUN road.
(g) The 1st Obsn Sq will maintain contact with the cavalry and our own advance troops, and will observe the enemy's forces along the SOUTH BRANCH CONEWAGO.

4. See Adm O No 30, which will issue later.
Station for slightly wounded will be established about 2:00 PM near crossroads 596.

5. (a) Division axis of signal communications extended: GULDENS—NEWCHESTER—ROUND HILL—BERMUDIAN CHURCHES.
(b) Command posts: Division changes at 3:00 PM from LITTLESTOWN to GULDENS. An advance CP will be established along road MORITZ SCHOOL—NEWCHESTER, under personal direction of the division commander, as soon as practicable.
17th Brig changes to road junction 596.
18th Brig changes to crossroads 506.

A,
Maj Gen.

Official
GX
Asst C of S G3

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Distribution:

17th and 18th Brigs
9th FA Brig
9th Obsn Sq, 9th Engrs
25th MG Bn
1st Corps, 10th Div and 12th Div
1st Bn 36th Inf
1st Bn 33d Inf
2d Bn 34th Inf
2d Bn 35th Inf
25th LA for 1 bn
26th LA for 1 bn
27th HvA for 1 bn
9th Engrs for 1 co
CO Tanks
COs Right Column, Left Column, and Reserve
Corps Cav
Div Staff
War Diary.

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CHAPTER IX

Problem of Decision

MAJOR WILLEY HOWELL,
Judge Advocate

Maps: General Map, Gettysburg-Antietam, 1"=10 miles. Geological Survey Map, Pennsylvania-Maryland, 1:62500, Fairfield, Gettysburg, Emmitsburg, Taneytown, Westminster Sheets.

Situation:

The state line Pennsylvania—Maryland is the boundary between countries whose relations are strained, Blue to the north, Red to the south.

The mobilization center of the 1st Blue Division is in cantonments immediately west and northwest of Gettysburg; of the 2d Blue Division at York; of the 3d Blue Division at Carlisle.

At 10:00 PM, February 19, 1920, the division commander, 1st Blue Division, received a telegram from the commanding general, 1st Corps, dated at York, 9:30 PM, same day, and reading in part as follows:

> "War between Blue and Red was formally declared at 8:30 PM, today. Bodies of Red troops, strength unknown, are reported to be assembling at Westminster and Woodsboro.
>
> "The 1st Army assembles its nine divisions in the vicinity of Gettysburg and to the south preparatory to an invasion of the enemy's country.
>
> "Move your division early tomorrow to Taneytown, seize and hold that place with observation toward Westminster, Woodsboro and Thurmont.
>
> "You will be supported on your left by the 2d Division, the leading elements of which will begin to arrive at Littlestown by rail at about 3:00 PM, 21 February; and on the right by the 3d Division, which upon its arrival by rail at Gettysburg during the night 21-22 February will be sent by marching to Emmitsburg.
>
> "It is highly important that the 1st Army concentration be not interfered with by the enemy. The measures of prevention constitute the task of your division for February 20 and 21."

At 9:00 AM, February 20, 1920, the head of the main body of the 1st Blue Division, which Major General A, the

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division commander, is accompanying, arrives at the road junction in Harney.

The situation of the division at this time is as follows:

Advance Guard:
Troop A, 1st Cavalry.
1st Infantry.
1st Battalion, 1st Light Artillery.
Company A, 1st Engineers.
One radio section, 1st Field Signal Battalion.
4th Ambulance Company.

The tail of the reserve is near the Alloway Creek crossing of the Harney—Taneytown road. The leading infantry elements of the advance guard have arrived at Taneytown and are putting out march outposts on the approaches from the direction of the enemy. The field trains of all the units composing the advance guard have been combined and are marching at the tail of the reserve.

The order of march of the main body of the division, as set forth in the march order, is as follows:

Division headquarters (less second echelon and field train).
1st Field Signal Battalion (less field train and detachments).
1st Brigade (less 1st Infantry and all field trains).
1st Field Artillery Brigade (less 3d Heavy Artillery; 1st Battalion, 1st Light Artillery; all combat and field trains).
2d Brigade (less field train).
1st Machine Gun Battalion (less field train).
3d Heavy Artillery (less combat and field train).
1st Engineers (less Company A and field trains).
Combat trains, 1st Field Artillery Brigade (less combat trains 1st Battalion, 1st Light Artillery).
1st Sanitary Train (less 4th Ambulance Company and field trains).

The field trains of the division, except those belonging to units of the advance guard and to the cavalry squadron, have been ordered combined and to follow the tail of the main body at one mile. The division trains, except the 1st Sanitary Train, have been directed to remain in cantonments west of Gettysburg until further orders.

The division has been directed to follow the Taneytown Road from Gettysburg through Barlow.

The 1st Squadron, 1st Cavalry (less Troop A), and one radio section are on the Baltimore Turnpike, moving in the direction of Westminster.

The 1st Observation Squadron is not ready for the field. It was reported to the division commander that one plane would take the air at about 8:45 AM.

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The following information was received by Major General A on his arrival at Harney at about 9:00 AM:

From a Blue spy:

"The Red inhabitants living near the border say that there is a Red division mobilizing at Woodsboro and another at Westminster, both about ready to take the field. They have a rumor that the Woodsboro division will move as soon as possible after war is declared to attack the Blues at Gettysburg and that it will be supported by the Westminster division."

From the airplane dropping ground near Harney:

"Very strong hostile column of infantry and artillery advancing on Taneytown from Woodsboro, leading element opposite Sharretts at 8:50 AM. Strong assemblage of hostile troops at Westminster; some detachments on road to Littlestown engaged with our cavalry; whole force seems to be moving out on Littlestown Road. No hostile air service. Must return to Gettysburg for repairs."

From the advance guard commander by radio:

"Report just received from cavalry patrol indicates presence strong hostile column all arms except cavalry on Taneytown—Woodsboro road, advancing on Taneytown. Leading infantry element crossing Little Pipe Creek about 8:10 AM."

From the independent cavalry commander by radio:

"Am engaged in developing strong hostile force of infantry and artillery without mounted troops that is pushing forward on the Westminster—Littlestown road on Littlestown, leading element at 8:50 AM approaching Mt. Pleasant. Shall delay the advance of this force with my full strength."

Required:

1. Major General A's estimate of the situation at 9:00 AM.

2. Orders as actually issued by Major General A.

NOTE 1:—The organization of a Red division is known to consist of one infantry brigade of three regiments, each regiment practically the same as our own and numbering about 3,000 rifles; and one artillery brigade organized and armed the same as a Blue artillery brigade; other services in proportion and about the same.

NOTE 2:—Rock Creek, from the 750th co-ordinate to its mouth, is impassable except at such road crossings as are not fords, as shown on the geological survey map. Marsh Creek is in the same condition from the crossing of the Emmitsburg Road. The bridges generally are wooden king and queen post trusses on brick abutments.

NOTE 3:—Use the geological survey map, 1:62500, for solving the problem.

NOTE 4:—There is commercial wire communication along the line of march to Gettysburg and from Gettysburg to the cantonments of the 1st Division.

An Approved Solution

It is reasonably clear from the corps commander's telegram that General A's mission has a double aspect—a tactical side and a strategical side. The most important matter

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set forth is that which refers to the concentration of the 1st Army. As General A sees the plan of the corps commander, it is evident that the 1st, 2d and 3d Divisions, forming the 1st Corps, are to be established in such a manner that the remaining six divisions of the 1st Army may be concentrated in the Gettysburg region, in rear of the center, without interference by the enemy. General A does not know by what routes the concentration is to be made, but presumes that the railroads leading into Gettysburg from the north and northeast will be those of maximum importance. From a strategical standpoint, then, General A's mission involves the protection of the Gettysburg region and of the avenues of approach thereto from the north and northeast.

There is a minor strategical idea also involved in the corps commander's order—that which refers to the 1st, 2d and 3d Divisions and the plan for their disposition. This is of less ultimate importance but greater immediate importance than the other. The 2d Division is to be sent from York to Littlestown by rail, at which latter place it will take up a position supporting the 1st Division and on its left flank. The York—Littlestown railroad and Littlestown, itself, are the important factors in this matter. On the other side, the 3d Division is to come from Carlisle to Gettysburg by rail, then by marching to Emmitsburg, as a support for the right flank. Until the arrival of the 3d Division at Gettysburg, its movements add nothing to the strategic problem already set forth as connected with the protection of the concentration of the 1st Army. After that time, General A assists it by the mere performance of such normal duties as would be required for the protection of his own right flank.

It seems evident that the corps commander's idea is to establish a "buttress of defense" for the Gettysburg region, with the 1st Division as the point, the other two divisions as the right and left wings, respectively. But it has apparently been presupposed that the enemy could not enter into the general scheme of things until it would be too late; or, if he could, then General A would be able to take appropriate counter-measures.

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The tactical part of General A's mission proceeds directly from the above and seems comparatively simple. The 1st Division is to seize and hold Taneytown and to observe toward Westminster, Woodsboro and Thurmont. The first part of this mission has already been practically accomplished.

According to the information received by 9:00 AM, which appears reasonably reliable, the bodies of Red troops, strength unknown, reported at Westminster and Woodsboro, amount to a Red division each.

The Reds have a different divisional organization from the Blues. The effect of this is that they have in the immediate field a preponderance of strength equivalent approximately to a brigade of infantry and one of artillery. That is, they are about one-third stronger in infantry and twice as strong in artillery. This is an appreciable excess of available force.

A notable feature concerning the Reds is their apparent lack of nearly all means of gathering information. Neither the Red cavalry nor the Red air service has yet appeared on the scene. It is obvious that this places the Reds at a considerable disadvantage. That they know something of the general situation and have an inkling of the Blue plan of concentration seems evident. But they will with great difficulty, if at all, secure a grasp of the immediate situation, and it will be extremely difficult for them to recognize changes in it.

The Red right column is in contact with the Blue cavalry, but will not be able for the moment to ascertain whether it is backed up by other troops or not.

The left column may or may not be aware of the presence of cavalry in its front. In any event, it cannot know at once of the presence of the Blue advance guard. Both columns have doubtless observed the reconnaissance activities of the one observation plane.

In short, the Reds, by process of reasoning from the scanty data now available, will be aware of unusual Blue activity; they will doubtless soon know that that activity involves the Blue division at Gettysburg; their sources of information may even be sufficiently accurate to enable

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them to realize that the activity is local with the Blue Gettysburg division; but they will not be aware of the exact nature of this activity nor of the changes that may occur in it.

It is probable that the condition of the Red troops is the same as that of the Blues. Neither side is as yet inured to the hardships of war. Consequently, General A may rely on the fact that the enemy will have to content himself for the 20th February with the exertions that will be required of his troops in the performance of rather long marches. This will perhaps be only approximately so. The Woodsboro Reds have to make a twelve-mile march before they can arrive at Taneytown; the Westminster Reds, similarly have to make a thirteen-mile march before they can arrive at Littlestown. Unless the Reds make the fatal mistake of taking so much out of their men on the first day that they will be in a semi-unfit condition on the second, they will attempt little more on the 20th. On the other hand, an accurate appreciation of the enemy's situation points to the fact that he is intent on striking a blow and striking it quickly. He has been content, in order to get the value of his offensive action, to move out without information and without the means of gathering information, and it appears more than probable that he will push his men to the utmost, even at so critical a period as the first day. But there is a certain element in General A's favor involved in these long march distances. At least, it appears that, in a negative fashion, they will enable him to accomplish his primary strategic mission on the 20th.

The enemy's plans and intentions are deducible from his present lines of action. His two divisions are fairly definitely committed to advances on the Woodsboro—Taneytown road and on the Westminster—Littlestown road respectively. The Woodsboro division might have advanced on Gettysburg more directly by way of the Emmitsburg region, but it would not have been within supporting distance of the Westminster division, unless the latter had taken the route through Taneytown, which it has not done. The Westminster division might have marched on Taneytown and have taken that route in rear of the Woodsboro

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division. This would not have accorded so well with principles of grand tactics, which is that each division be assigned its own road. It would further have complicated the matter of deployment for combat.

There would be no point at all to the Red operations without the assumption that Gettysburg is their combined objective. General A can assume with a fair degree of certainty that the enemy will continue his advance on Gettysburg, one division by way of the Baltimore Turnpike, the other through Taneytown—Harney, and that it is the enemy's intention to make use of these converging lines of advance in the concentration of his divisions for a tactical offensive in the region immediately south of Gettysburg.

The advance guard of the 1st Blue Division is already in possession of Taneytown. The head of the division is at Harney, while such part of it as has taken up the march by 9:00 AM occupies the road between Harney and Gettysburg. The tail of the 2d Brigade may be assumed to be passing over Seminary Ridge, about to enter the western limit of Gettysburg.

The relative positions of the Red point and the head of the Blue main body are now such that General A can, without difficulty, accomplish his tactical mission—that is, he is in a position to seize and hold Taneytown. Whether this action would be advisable or not is another matter. The Red Westminster division is on the road to Littlestown and is unopposed except by the three troops of Blue cavalry. The concentration of the Blue division at Taneytown would, except for the cavalry, leave open the Baltimore Turnpike leading directly to Gettysburg. General A cannot presuppose that, if the Red Westminster division finds its way to Gettysburg open, as it may do if only the cavalry appears on its front, it will deliberately abandon its opportunities in order to turn aside and assist the Woodsboro division in an effort to gain a tactical victory over General A's division. A more logical procedure and one more in conformity with sound tactical judgment would be that the Woodsboro division will endeavor to detain General A at Taneytown by a holding attack while the Westminster division proceeds to gain the strategical objectives of the general mission, or else to strike his flank and rear.

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General A can expect no profitable results from a decision to throw his entire strength on the Woodsboro Reds at this time. He would need his whole force for the purpose, were he to attempt it, and it is open to nearly all the objections to the tactical defensive at Taneytown. The Woodsboro division is in no such critical situation as would warrant the hope that it could be easily and quickly destroyed.

The whole situation, in short, hinges on the location and potential activities of the Red division from Westminster.

General A cannot meet the influence that the Westminster Reds will exert on the situation and still mantain himself in Taneytown without dividing his forces. So much seems obvious. It is now a question whether even this would pay. It patently would not unless an important object could be gained thereby. The important object, in the foreground of the situation, is the protection of Littlestown, where the junction is expected to be made with the 2d Division from York.

The leading infantry of the main body, consisting of that part of the 1st Brigade which is not in the advance guard, can, allowing for a reasonable time to be gained by the cavalry, reach the Baltimore Turnpike about two miles south of Littlestown at about the same time that the point of the Red advance guard can get there. There would be no time left for the preparation of a position, or for anything other than a delaying action. A delaying action under these conditions would merely slow the enemy down a trifle. It would not suffice to protect Littlestown nor to prevent him from reaching it on the 20th. The same would be true if the 2d Brigade, the head of which is now approximately at 350—744, were sent on such a mission. The head of the 2d Brigade can reach Littlestown only twenty minutes or so before the Westminster Reds, allowing for the delay by the cavalry. While it might hold Littlestown for the time being, it could not hope to do so until the arrival of the 2d Division.

It is thus seen that Littlestown cannot be held, even though the command be divided for that purpose. It is also evident that, lacking the opportunity to block the road to

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Littlestown or to hold that place, there is considerable disadvantage, even danger, in a concurrent endeavor to hold Taneytown. The loss of Littlestown as a connecting point with the 2d Division is not what might be called vital—it is only inconvenient. Hanover is equally good as a connecting point and, while not the point determined upon by the corps commander, the change can be made without apparent difficulty.

General A cannot, it appears, accomplish either his tactical mission or that part of his strategical mission which requires the protection of Littlestown. The mere length of the marches that the enemy must make will assure the accomplishment of the main strategic mission on the 20th. On the 21st, up to the time that the influence of the 2d Division may begin to be felt, some time after 3:00 PM, the main strategic mission must be worked out by the 1st Division alone. This means that practically during the entire day of the 21st it must protect the Gettysburg region and the lines of approach thereto from two Red divisions advancing along different lines. Fortunately, these lines of advance converge in such a fashion that General A has the opportunity of placing his division so that the two Red divisions must attack it before passing farther. For this purpose, he may draw liberally on the attractive force that his division will naturally exert on the enemy divisions. A glance at the map assures General A that the effort should be made in a suitable place east of Rock Creek rather than west of that creek on the high ground south of Gettysburg.

In brief the most favorable line of action to be adopted by General A now appears to be such as will result in bringing about a concentration of the Red divisions on one front as early as possible on the 21st, east of Rock Creek and as far as possible from Gettysburg. It will be only through a concentration of the two Red divisions, a bringing of both of them within the sphere of influence of his own division at the same time, that General A will be able to handle the probable eventualities of the 21st.

The terrain next demands the attention of General A. The cavalry on the Baltimore Turnpike confronting the Westminster Reds will, on account of the rough country

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through which the latter must advance, be able to accomplish considerable in the way of delaying, harassing and annoying the hostile column, and that without considerable loss. General A approves the independent decision of the squadron commander to delay the enemy with his full strength, but does not desire that his small cavalry force be too severely taxed in the effort. A reinforcement of the power of the cavalry with a unit having great fire power and much mobility seems clearly indicated. For this purpose, General A has available the division machine gun battalion, the head of which is now about to enter the western edge of Gettysburg.

The crossings of Rock Creek from Barlow south, and the crossings of the Monocacy from Bridgeport north have an important bearing, in that their destruction would prevent the Woodsboro Reds from readily approaching Gettysburg by routes along the west side of those streams. General A ought to make full use of these river lines as obstacles, with the idea of holding the Reds east of Rock Creek. The crossings north of Barlow should be prepared for destruction but should not be immediately destroyed, as General A may need them himself. In fact, they should not be destroyed at all unless it becomes necessary. For this work, General A has with the advance guard, Company A, 1st Engineers, and the remainder of the engineer regiment, which has not yet taken up the march. The regiment could perform more than useful service, after the destruction of the crossings, by assisting in the defense of the right flank.

The advance guard must be withdrawn. It may be withdrawn immediately without contact with the enemy, and assembled wherever General A may desire. Or it may be used to delay and interrupt the enemy without becoming seriously enough engaged to require assistance to disentangle it. For this latter form of action, the terrain north of Taneytown is quite favorable. The direction of withdrawal may be such as would ultimately result in its rejoining its own brigade, and would tend powerfully to pull the enemy after it.

As for the disposition of the main body, it is too early to plan for the occupation of a defensive position, or even

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for a partial deployment of the division. A position in readiness from which General A can take up a defensive position or move promptly is strongly indicated. It is merely a question of where such a position in readiness should be. There is not much choice if General A intends to control both of the enemy's lines of approach and at the same time to remain east of Rock Creek. A glance at the map convinces General A that there is no point so suitable as the center or focus of a position in readiness as the high ground about 1½ miles southwest of Germantown (598). This ground has the advantage that it can readily be developed into an excellent defensive position. The line of advance on Gettysburg east of Rock Creek is but a trifle over 3 miles distant; it possesses good lines by which the present advance guard can reach it if required to withdraw in the face of the Woodsboro Reds; it is convenient for the rapid assembly of the remainder of the troops, now in march order; and it balances well over toward the Baltimore Turnpike. This latter is important, for General A may reasonably expect an attack on the 21st by the Westminster Reds a few hours before the Woodsboro Reds can appear on the scene. From the vicinity of 598 he can prevent the passage of the Westminster Reds, so that they will have to attack; at the same time, without dispersing his command, he can assure that the Woodsboro Reds do not move up east of Rock Creek without attacking; and, in any event, he will have the means of readily withdrawing across Rock Creek and fighting another battle for the safety of Gettysburg. If the two Red columns decide to combine and organize a regular attack against him, which is the only way in which they can hope to use their strength in a co-ordinated manner and with its fullest power, much time will be lost and General A will still be advantageously situated to try out the result.

General A reviews the plans that seem possible of execution. They are:

1. To seize and hold Taneytown without a division of his command. Impossible on account of the Westminster Reds.

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2. To attack the Woodsboro Reds with the entire division. Equally impracticable and for the same reason.

3. To hold Taneytown against the Woodsboro Reds and Littlestown against the Westminster Reds. There is not sufficient time to undertake this operation with a reasonable probability of success. Further, it involves a dangerous dispersion of the division, the two parts of which would then be compelled to fight superior forces under conditions where unity of command and of action would be practically impossible.

4. To retire west of Rock Creek and defend the high ground south of Gettysburg. This means giving up many valuable opportunities. It also opens the way for the enemy to work around to the east and north of Gettysburg and cut the very lines of approach which it is one of General A's main duties to protect.

5. To withdraw the main part of the command to a position in readiness on the high ground to the southwest of Germantown, delaying the enemy and preventing his crossing to the west of Rock Creek; and to bring about a battle on the 21st February in the region mentioned. This plan, while a compromise of conflicting factors, is not a half measure and offers more chances of ultimate success than any other. General A therefore adopts this plan. The initial orders do not, on account of the need for haste, attempt to do more than start the command toward the several parts of the position. Details of the occupation will be ordered later.

DECISION

To withdraw the main body at once and establish it in a position in readiness on the high ground 1½ miles southwest of Germantown; the advance guard to be withdrawn slowly, delaying the enemy without becoming seriously engaged; the cavalry to be reinforced with the division machine gun battalion and to delay the enemy's march on Littlestown; the crossings of the Monocacy and Rock Creek from Bridgeport (inclusive) to Barlow (exclusive) to be destroyed.

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ORDERS

By wire to the commanding officer, 1st Machine Gun Battalion (head at the western entrance to Gettysburg), at 9:15 AM:

"The division withdraws to a position in readiness on the high ground southwest of Germantown.

"Proceed rapidly by the Baltimore Turnpike to Union Mills reporting upon arrival to the commanding officer, 1st Squadron, 1st Cavalry, for duty."

By radio to the commanding officer, 1st Cavalry, at 9:18 AM:

"The advance guard has developed a division of hostile troops on the Woodsboro—Taneytown road, marching on Taneytown. The division withdraws to a position in readiness on the high ground southwest of Germantown. Am sending the 1st Machine Gun Battalion by the Baltimore Turnpike to support you.

"Withdraw on Littlestown, delaying the enemy without incurring severe loss. Division headquarters to 10:30 AM at Harney; afterwards at Two Taverns."

By motorcycle messenger to the commander of the advance guard at 9:23 AM:

"The cavalry has developed a hostile division on the Westminster—Littlestown road, marching on Littlestown. Our division withdraws to a position in readiness on the high ground southwest of Germantown.

"Move your command down the Taneytown—Woodsboro road, meet the enemy and force a deployment; withdraw slowly, without becoming seriously engaged, but delaying the enemy at each suitable position, by way of Piney Creek Church and the roads leading north from there, on hill 598 about one and one-half miles southwest of Germantown, reporting upon arrival to your brigade commander.

"Company A, 1st Engineers, will be sent immediately to destroy the crossings of the Monocacy and Rock Creek, beginning at Bridgeport and working north to crossing northwest of Barlow, exclusive. The 1st Engineers is being ordered to Mountjoy Church and will help in the destruction of the crossings. Direct Company A to rejoin 1st Engineers on completion of this duty.

"Half the advance guard cavalry with radio section will be sent to Emmitsburg to patrol between the Monocacy and the mountains.

"Your field train will remain at your disposal until 3:00 AM, tomorrow. Division headquarters at Two Taverns after 10:30 AM."

By wire to the commanding officer, 1st Engineers, cantonments west of Gettysburg at 9:30 AM:

"Hostile division encountered on Woodsboro—Taneytown road, moving on Taneytown, head near Sharretts. A second hostile division on the Baltimore Turnpike marching on Littlestown. Our division withdraws to a position in readiness on high ground southwest of Germantown.

"Proceed immediately by routes west of our present line of march to the west of Rock Creek to Mountjoy Church and report. Destroy the crossings of Rock Creek and the Monocacy from

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Bridgeport, inclusive, to the crossing northwest of Barlow, exclusive. Company A has been ordered detached from advance guard, and to begin destroying crossings at Bridgeport, working north, and to rejoin you.

"Your field train may accompany you. Division headquarters after 10:30 AM at Two Taverns."

Duplicated message to commanding general, 1st Brigade, 2d Brigade, 3d Field Artillery Brigade; commanding officer, 1st Field Signal Battalion, 1st Sanitary Train, the officer in charge of the field trains and the commander of trains, at 9:35 AM:

"The enemy is advancing, one division on Taneytown, head at 9:00 AM near Sharretts; one division on Littlestown, head near Mt. Pleasant. Our advance guard and independent cavalry, now in contact with these hostile forces, have been ordered to retire, delaying the enemy en route. The engineers will destroy the crossings of the Monocacy and of Rock Creek, from Bridgeport to the crossing northwest of Barlow, exclusive, and assemble at Mountjoy Church.

"Our division withdraws to a position in readiness on the high ground southwest of Germantown.

"The 1st Brigade, less troops now in the advance guard, will move by roads south of the 740 co-ordinate to point 568 (355.0—739.5), thence to point 598 about one and one-half miles southwest of Germantown, where it will bivouac in assembly formation and outpost the line Alloway Creek—Edgegrove School to Rock Creek. It will be joined in this position by the advance guard.

"The 2d Brigade will turn east and, passing by points 418, 491, will bivouac in assembly formation at 354.5—742.5.

"The 1st and 2d Light Artillery, head now near Barlow, passing points 482, 543, will take up an assembly position at 355.0—742.0. The 3d Heavy Artillery and the combat trains of the 1st Field Artillery Brigade will proceed to point 515, on the Baltimore Turnpike northwest of Two Taverns, and there await further orders.

"The 1st Field Signal Battalion will establish wire communicating stations at Mountjoy Church, at each brigade headquarters, at division headquarters, and temporarily at Littlestown. Assembly point at Two Taverns.

"The 1st Sanitary Train will send a motorized ambulance company by way of the Baltimore Turnpike and establish a dressing station at Littlestown for the collection of the wounded pertaining to the cavalry and the 1st Machine Gun Battalion. This organization will have precedence on the road over the 3d Heavy Artillery and the artillery combat trains. The remainder of the 1st Sanitary Train will follow the 3d Heavy Artillery and the artillery combat trains to point 489, on the Baltimore Turnpike, and there await further orders.

"The field trains of the division, as soon as the roads are clear, will move by the Taneytown Road and follow the route of the 2d Brigade, halting off the road near point 418, west of Rock Creek, where they will await further orders.

"The division trains will move, as soon as the roads are clear, to an assembly position west of Cemetery Hill, where they will await further orders.

"Division headquarters until 10:30 AM at Harney; then at Two Taverns."

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CHAPTER X

A Cavalry Division

(A) STRATEGIC RECONNAISSANCE

CAPTAIN EMMETT ADDIS,
Cavalry

Maps: General Map, Gettysburg-Antietam, 1″=10 miles.
Pennsylvania-Maryland Geological Survey Map, 1:62500, Fairfield, Gettysburg, Emmitsburg, Taneytown, Ijamsville, Mount Airy Quadrangles.

General Situation:

The line Potomac River (west of Williamsport)—Conococheague Creek—Conewago Creek—Susquehanna River is the boundary between a Blue state (north) and a Red state (south). Since 15 February, 1920, the Blues have had strong detachments, principally cavalry, along the frontier, while the Reds have had only scattered, weak cavalry detachments.

War was declared 15 March, 1920, by the Blues.

Special Situation (Blue):

The Blues have concentrated two armies on the line Shippensburg—Carlisle—Harrisburg—Lancaster.

Since the 1st of March, the 1st Cavalry Division has had its 1st Brigade, with headquarters at Hampton, on the frontier from The Narrows to the mouth of the Conewago Creek. The rest of the division arrived on 14 March, 1920, and camped as follows:

Division headquarters: Bendersville.
2d Brigade: along Opossum Creek, headquarters at Center Mills.
3d Brigade: along Bermudian Creek, headquarters at Goodintent Mills.
The remainder of the division in the vicinity of Bendersville.
The 1st Brigade was then assembled in the vicinity of Hampton.

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Upon the declaration of war, detachments from the 1st Brigade seized the crossings of the Conewago Creek from 371.6—761.7 (inclusive) to Hershey Mills (exclusive), and detachments from the 2d Brigade, from Hershey Mill to The Narrows (both inclusive).

At 12:00 noon, 15 March, 1920, General A, commanding the 1st Cavalry Division, received the following instructions from the 1st Army:

The Reds are concentrating at WASHINGTON and BALTIMORE. Small forces are reported at YORK, PARKTON and WESTMINSTER. No troops of any consequence are reported in GETTYSBURG. The situation between PARRS RIDGE and CATOCTIN MOUNTAINS is not clear. West of these mountains, there are few troops and the inhabitants are inclined to join with us.

It is the intention of the commander-in-chief to invade the Red state for the purpose of winning the inhabitants west of the CATOCTIN MOUNTAINS, clearing up the situation east of these mountains and destroying the Red army.

The 2d Army will be on the east, and one day's march to the rear of the 1st Army. The 2d Cavalry Division, covering the 2d Army, will have its contact troops on the PENNSYLVANIA—MARYLAND STATE LINE late 16 March, 1920.

Boundary between armies: DILLSBURG—HANOVER—UNION MILLS—WESTMINSTER—PARRS RIDGE (all to 1st Army).

The 1st Army marches today, with its right advanced, holding itself prepared to give battle, faced to the east, if necessary.

Zones of Action:

1st Corps:
Western boundary: ----------
Eastern boundary: SOUTH MOUNTAIN and CATOCTIN MOUNTAINS (all inclusive).

2d Corps:
Western boundary: Same as eastern boundary of 1st Corps.
Eastern boundary: CENTER MILLS—TABLE ROCK—ROCK CREEK (all to 2d Corps)—KEYMAR—LIBERTYTOWN—NEW MARKET (all to 3d Corps).

3d Corps:
Western boundary: Same as eastern boundary of 2d Corps.
Eastern boundary: Same as eastern boundary of 1st Army.

The leading elements of the advance guards of the corps should reach the following lines:

1st Corps	Date and hour	2d and 3d Corps
CHAMBERSBURG—GETTYSBURG road.	6:00 PM, 15 March	HUNTERS RUN—DILLSBURG
PENNSYLVANIA—MARYLAND STATE LINE.	12:00 noon, 16 March	CONEWAGO CREEK

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The 1st Corps will be covered by its own cavalry.

The 1st Army Air Service will reconnoiter the 1st Army zone of action and all roads and railroads leading from BALTIMORE, WASHINGTON and LEESBURG into the 1st Army zone of action. It will co-operate closely with the 1st Cavalry Division.

The 1st Cavalry Division will advance on FREDERICK early 16 March, 1920, and develop the hostile situation between PARRS RIDGE and the CATOCTIN MOUNTAINS.

Early information is desired of any hostile movements towards PARRS RIDGE from the east and in the vicinity of LEESBURG. Contact will be maintained with the 1st Corps cavalry and the 2d Army cavalry.

Railhead for 1st Cavalry Division for 16 March: BIGLERSVILLE.

Command Post: 1st Army, CARLISLE.

Required:

1. General A's estimate of the situation.
2. The formal field orders issued by General A.

First Requirement:

MISSION

The mission of the 1st Cavalry Division is to march on Frederick and clear up the hostile situation between the Catoctin Mountains and Parrs Ridge; to discover hostile movements toward Parrs Ridge from the east; to discover enemy movements in the vicinity of Leesburg; and to maintain contact with the cavalry of the 1st Corps and the 2d Army. In short, the principal mission is to get information of the main forces of the enemy.

ENEMY FORCES

The enemy is concentrating at Washington and Baltimore. Small forces are reported at York, Parkton and Westminster. A very few cavalry detachments are along the frontier. There are a few troops west of the mountains.

The cavalry detachments can offer very little opposition, but they can secure information. They will have to be pushed back vigorously.

Red troops are still concentrating at Baltimore and Washington and are, therefore, not as well prepared as the Blue army.

In case the enemy decides to complete his concentration before moving forward, he will probably take a defen-

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sive position, sending his cavalry well forward, say to the line Parrs Ridge—Parkton or even farther, to act as a screen.

In case he decides to move forward at once before completing his concentration, he will also send his cavalry forward in this same direction, followed by his divisions and corps.

The movement of the 1st Corps will attract the attention of the Red army. It may cause the Baltimore forces to send cavalry in that direction, toward Westminster. The cavalry of the Washington forces may move toward Frederick; and the cavalry of any forces in the vicinity of Frederick toward Hagerstown. All the cavalry of these forces will not be sent in these directions; for instance, the Baltimore forces will not leave their right flank uncovered.

The southward movement of the 2d and 3d Corps may cause these hostile cavalry forces to turn toward it. This may block General A in clearing up the situation.

If the Frederick forces have cavalry, General A may expect to meet it on the line Emmitsburg—Westminster, or farther north tomorrow.

If the cavalry of the Baltimore forces moves northwest, it may be expected to be in the vicinity of Westminster tomorrow, while the cavalry of the Washington forces may be expected about Frederick and Libertytown tomorrow.

The southward movement of the 2d Cavalry Division should attract much of the cavalry of the Baltimore forces toward it. This, then, should relieve some pressure from the vicinity of Westminster. Assuming that the Reds have discovered the left of the 1st Cavalry Division, upon learning that the 2d Cavalry Division is in the left rear of the 1st Cavalry Division, the Reds will be rather cautious about sending large bodies of troops between the two Blue divisions.

Concerning the strength of the cavalry in any of these forces, General A has no information. In fact, he does not know whether there are any troops at Frederick. It can be inferred that the Blues think that they are stronger, as they have concentrated nearer the frontier, have declared war and are advancing. From the fact that the Blues have

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had larger cavalry detachments along the frontier, the conclusion can be drawn that the Reds are not as strong in cavalry. Still, it may be that the Reds have withdrawn their cavalry farther to the rear in order to strike the Blue cavalry after it crosses the frontier.

The forces reported at Westminster may move north toward Littlestown.

General A can deduce that the vicinity of Westminster is his most dangerous locality at present. Red troops are already there and they may be reinforced by cavalry from the southwest and southeast. Forces may also be encountered on the line Emmitsburg—Littlestown. A few Red troops west of the mountains may escape, or may be driven through the mountains by the cavalry of the 1st Corps. If this should happen, they might strike General A's right flank in the vicinity of Zora, Thurmont and the passes farther south.

Our Own Forces

On the 16th, to the west and abreast of the 1st Cavalry Division, there should be the cavalry of the 1st Corps (two regiments); to the east, along the state line there should be the 2d Cavalry Division; in rear along the Conewago there should be the advance guards of the 2d and 3d Corps, and between these advance guards and the 1st Cavalry Division there should be the cavalry of the 2d and 3d Corps.

Contact must be maintained with these cavalry forces. The cavalry of the 1st Corps operating in the mountains guards to a certain extent the passes through the Catoctin Mountains. Nevertheless hostile forces may come through the mountains after the 1st Cavalry Division has passed. The cavalry of the 2d Corps should handle this situation. There must be co-operation between the cavalry of the 1st Corps and the part of the 1st Cavalry Division which marches next to the mountains. This must be maintained by means of cavalry patrols and air service.

The 2d Cavalry Division will guard the left rear of the division. Some hostile forces may get through in this gap. They will be small, and must be taken care of by the corps cavalry behind the 1st Cavalry Division.

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The zone of action of the 1st Cavalry Division is about 20 miles wide. One brigade acting as a screen can cover about 10 miles of front and not become too dispersed. This, therefore, determines that the march should be made in not less than a two-column formation.

During the first part of the march, the country is rolling; farther to the south, the country east of the Monocacy becomes hilly and more difficult. The country to the west of the river around Frederick becomes more open and flat.

The dividing line between brigades should be selected so that the brigade having the hilly country and the probable hostile movement on its east flank, will have the narrower sector. The line Plainview—Granite Hill—Two Taverns—Taneytown—Union Bridge—Libertytown—New Market fulfills these requirements.

The routes of the different brigades need not be designated by the division commander. The brigade commanders should be given great latitude. They should be given their zone of action and their mission, and the details should be left to them. While out in advance, with an unknown situation in front of them, a large amount of initiative on the part of cavalry commanders of all grades is required for the proper performance of their duties. This initiative should be cultivated at all times. They should be hampered with as few details as possible.

The division reserve is the force with which the division commander influences the fight, and it should be given a route so that its exact location will be known at all times. The fact that the greatest danger is likely to come from the east requires the reserve to be placed toward that flank. However, danger may come from Frederick. If the reserve is marched along the dividing line between brigade zones of action, it will answer both purposes.

From the positions of the brigades, the 1st Brigade should become the east column, the 2d Brigade the west column and the 3d Brigade the reserve.

Both of the brigades that are covering the front will need artillery. At the same time, the division commander also should keep as much artillery as possible for his own

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use. He may need it when it becomes necessary to force his way through any opposing force in order to get information of the enemy's main forces, or to drive back any enemy that seeks to do likewise. This divides the artillery regiment into three parts, say one battalion in each.

All columns will need engineers; the eastern column not as many as the other two as it will not have such large rivers to cross. One platoon should be sufficient. The western column has the Monocacy River and the lower part of Big Pipe Creek in its zone of action. It will need more engineers, say one company.

The engineer train has three light canvas bridge divisions with it. A ponton bridge may be needed in the western zone. For this reason the engineer train should be well forward—say with the center column—ready to move forward, or to the flank on call.

The two important towns in the first part of the march are Gettysburg and Hanover. Therefore the reconnoitering and seizing of them should be considered as the first step or bound in the operation.

As before mentioned, hostile troops may have advanced to Emmitsburg and Littlestown. Therefore, the reconnaissance and seizure of these places should be considered as the second step.

In the same way, on account of the mountain passes, the main roads through Parrs Ridge, the probable location of the enemy's forces, the railroads and the size of the towns, the other successive steps are—

Thurmont—Westminster.
Woodsboro—Taylorsville.
Frederick—Mount Airy.

General A has two other means at his disposal with which to help clear up the situation, his air service and his strategic patrols.

The air service should reconnoiter all towns, roads and railroads in the zone of action, Leesburg, the passes through the mountains, and the roads and railroads toward Baltimore and Washington. The air service should also connect with the cavalry of the 1st Corps and the cavalry of the 2d Army.

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Strategic patrols should be sent out at once toward Baltimore, Washington, Leesburg and Frederick to discover any movements of the enemy by rail or road. Baltimore and Washington are outside of the army zone of action, but the army instructions require early information of enemy's movements toward Parrs Ridge from the east. This implies that the zone of the army is liable to be turned to the southeast toward these towns. The 2d Cavalry Division should be notified that these patrols have been sent out.

Even with the army air service, the corps and division air service, and the strategic patrols searching for the movements from the known Red concentration, another precaution should be taken. The brigade marching on the east flank should also be instructed to search out and report any hostile movements toward Parrs Ridge from the east.

DECISION

General A decides to send out today strategic patrols, and to have the air service start reconnaissance; to march on Frederick tomorrow with two brigade columns, covering the front with contact troops, with a third brigade column as divisional reserve to the rear and between the columns.

Second Requirement:

1st Cav Div,
BENDERSVILLE, PA.,
15 Mch 20, 3:00 PM.

FIELD ORDERS
No — }

Maps: General Map, Gettysburg-Antietam, 1"=10 miles; Geological Survey, 1:62500. Fairfield, Gettysburg, Emmitsburg, Taneytown, Ijamsville, Mount Airy Quadrangles.

1. The Reds are concentrating at WASHINGTON and BALTIMORE. Small forces are reported at YORK, PARKTON and WESTMINSTER. West of SOUTH MOUNTAIN and CATOCTIN MOUNTAINS, there are few troops and the inhabitants are inclined to join with us.

The Blue armies advance today; the 2d Army on the left, and one day's march in rear of the 1st Army.

Boundary between the armies:
DILLSBURG—HANOVER—UNION MILLS—WESTMINSTER—PARRS RIDGE (all to 1st Army).

The advance elements of the 1st Corps' advance guard will reach the CHAMBERSBURG—GETTYSBURG road by 6:00 PM today, and the PENNSYLVANIA—MARYLAND STATE LINE by 12:00 noon, 16 Mch, 1920.

The 1st Corps will be covered by its cavalry.

Eastern boundary of 1st Corps: SOUTH MOUNTAIN and CATOCTIN MOUNTAINS (all inclusive).

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The advance elements of the advance guards of the 2d and 3d Corps will reach the CONEWAGO CREEK by 12:00 noon, 16, Mch, 1920.

The contact troops of the 2d Cav Div will reach the PENNSYLVANIA—MARYLAND STATE LINE late on the 16th.

2. This division advances tomorrow, on FREDERICK, to ascertain the strength and dispositions of enemy troops between CATOCTIN MOUNTAINS and PARRS RIDGE; and to secure early information of any hostile movements east of PARRS RIDGE.

Zone of Action:

Western boundary: Same as eastern boundary of 1st Corps.

Eastern boundary: Same as eastern boundary of 1st Army.

3. (a) The 1st Cav Brig, with 1 bn 1st HvA and 1 plat 1st Bn Mtd Engrs attached, will cover the front of the division in the brigade zone of action. Its contact troops will cross the CONEWAGO CREEK at 6:00 AM, 16 Mch. It will maintain contact with the 2d Cav Div. Early information is desired of hostile strength and dispositions in its zone of action, and of hostile movements east of PARRS RIDGE. It will send, at once, officers' patrols toward BALTIMORE, WASHINGTON and WESTMINSTER.

Zone of Action:

Western boundary: PLAINVIEW—GRANITE HILL—TWO TAVERNS—TANEYTOWN—UNION BRIDGE — LIBERTYTOWN—NEW MARKET (all exclusive).

Eastern boundary: Same as 1st Army.

(b) The 2d Cav Brig, with 1 bn 1st HA and 1 co 1st Bn Mtd Engrs attached, will cover the front of the division in the brigade zone of action. Its contact troops will cross the CONEWAGO CREEK at 6:00 AM, 16 Mch. It will maintain contact with the 1st Corps cavalry. Early information is desired of hostile strength and dispositions. It will send, at once, officers' patrols toward FREDERICK and LEESBURG.

Zone of Action:

Western boundary: Western boundary of 1st Cav Div.

Eastern boundary: Western boundary of 1st Cav Brig.

(c) The 3d Cav Brig, 1st HA (less 2 bns), 1st MG Sq, 1st Bn Mtd Engrs (less 1 co and 1 plat), and 1st F Sig Bn, Brig Gen D, commanding, will constitute the reserve. It will march on the PLAINVIEW—GRANITE HILL—TWO TAVERNS—TANEYTOWN—UNION BRIDGE road. The advance party will clear PLAINVIEW at 8:30 AM.

(d) The 1st Obsn Sq will reconnoiter GETTYSBURG, WOODSBORO, FREDERICK, HANOVER, TANEYTOWN, WESTMINSTER, MOUNT AIRY, LEESBURG, and roads and railroads in the division zone of action, during the remaining daylight hours today, to ascertain location and movements of enemy troops. The same will be done tomorrow, starting at daylight, and, in addition, the roads and railroads between PARRS RIDGE and the line BALTIMORE—WASHINGTON. The passes through the SOUTH and CATOCTIN MOUNTAINS will also be observed. It will render reports of the progress of the advance of this division and of the cavalry of the 1st Corps and 2d Army, every 2 hours, commencing at 9:00 AM.

It will be prepared to establish an advance landing ground near TANEYTOWN after 3:00 PM, 16 Mch 1920.

4. See Adm O.

5. (a) Plan of Signal Communications: No change.

(b) Axes of Signal Communications:

Div: BENDERSVILLE—GETTYSBURG—TWO TAVERNS—TANEYTOWN.

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1st Brig: HAMPTON—NEW OXFORD—BRUSHTOWN—LITTLESTOWN—SILVER RUN—PLEASANT VALLEY—FRIZZELBURG—JASONTOWN.
2d Brig: CENTER MILLS—GETTYSBURG—HARNEY—472 (east of BRIDGEPORT)—KEYESVILLE—DETOUR—WOODSBORO.

(c) Command Posts:
Div: Will close at BENDERSVILLE at 9:30 AM and open at GETTYSBURG at the same hour.
Brigs: En route. Location selected for night of 16-17 Mch will be promptly reported.

A
Maj Gen.

Copies to:

Staff
1st Cav Brig
2d Cav Brig
3d Cav Brig
1st HA
1st MG Sq
1st Obsn Sq
1st Bn Mtd Engrs
1st F Sig Bn
CO Tns
1st Corps
2d Corps
3d Corps
1st Army
2d Army
2d Cav Div

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(B) CAVALRY SCREENING

General Discussion

CAPTAIN ADNA R. CHAFFEE,
Cavalry

Air Service

CAPTAIN EARL L. NAIDEN,
Cavalry

PART I

The general situation which is given herein serves as a basis for the two discussions in Parts I and II.

Maps: General Map, Gettysburg-Antietam, 1″=10 miles.
Geological Survey, 1:62500, Hagerstown, Emmitsburg, Taneytown, Antietam, Ijamsville, Mt. Airy, Seneca, Rockville Quadrangles.

General Situation:

(See General Map, Gettysburg-Antietam.)

The Potomac River is the boundary between two states, Red, south, and Blue, north, at war.

The Blue army, which had invaded Virginia, has been forced north of the Potomac River and is now concentrated in the valleys of Antietam and Conococheague Creeks, leaving only militia detachments remaining in Maryland, east of the Catoctin Mountains. It is based on the line Carlisle—Perryville.

The Red army is in strength south of the Potomac from Leesburg to Shepherdstown.

Sun rises 6:55 AM. Sun sets 5:35 PM.

Special Situation:

Reports have reached the Blue army commander as follows:

On 11 March, one Red corps crossed the Potomac at Washington without opposition and occupied the District of Columbia.

On 15 March, reports indicate the movement of this Red force to the north. The Potomac River is in flood.

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Red attempts at long distance air reconnaissance during the past few days have been few. There have been, however, numerous air fights over the Red lines in Virginia. Red airplanes have been seen near Rockville.

On 15 March, the Blue army is situated as follows:

1st Corps: Observing the Potomac River from Williamsport to Point of Rocks (inclusive).
2d Corps: Region of Greencastle—Waynesboro.
3d Corps: Region of Chambersburg—Quinsonia.
4th Corps: Region of Arendtsville—Cashtown.
Army Troops: Along the line Hagerstown—Chambersburg.

An old airdrome exists at Frederick.

(See 1:62500 Map.)

1st Cavalry Division: The 1st Cavalry Brigade (1st Battalion, 1st Horse Artillery attached) is observing the roads through the Catoctin Mountains between Mountville (north of Point of Rocks) and Yellow Springs. The 2d Cavalry Brigade is near Beaver Creek (town); 3d Brigade near Foxville; and the remainder of the division, with division headquarters, is in and around Smithsburg.

At 10:00 PM, 15 March, the following order is received from the Blue army commander:

To CG, 1st Cav Div:

All reports indicate that the enemy that recently crossed the POTOMAC at WASHINGTON is extending his right to the north. Small cavalry detachments late today were reported in COOKSVILLE and near BALTIMORE, while the heads of his infantry columns reached the line ROCKVILLE—LAUREL—PATUXENT RIVER. His transports have been seen off BALTIMORE.

I intend to leave the 1st Corps to observe the crossings of the POTOMAC north of POINT OF ROCKS, and with the bulk of this army to strike the right flank of the Red forces in MARYLAND to drive them south of the POTOMAC.

2d, 3d and 4th Corps march tomorrow to reach the line LIBERTYTOWN—REISTERTOWN on the night of March 18th. Leading elements to reach on March 16th the following lines:

2d Corps: THURMONT—ZORA.
3d Corps: ORRTANNA—CASHTOWN.
4th Corps: LITTLESTOWN—HANOVER.

Bulk of cavalry of all three corps, concentrated in front of 4th Corps, will screen the left flank of the army north of the LIBERTYTOWN—BALTIMORE road.

Your division, reinforced, will move out early on March 16th and will seize PARRS RIDGE south of the LIBERTYTOWN—BALTIMORE road, screening the movement of the army to the east and south. You will prevent any Red forces crossing the POTOMAC between POINT OF ROCKS and the MONOCACY.

South of MT. AIRY you will carry out a strong demonstration towards ROCKVILLE on March 17th.

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The 1st Infantry at CRAMPTON'S GAP, and Battery A, 100th LA (carried in motor trucks) at BOONSBORO, are attached to your division.

Army air service will attack POTOMAC bridges near WASHINGTON and railheads south and west of ROCKVILLE on March 17th, co-operating with your demonstration.

Railhead 1st Cav Div: THURMONT, beginning March 16th.

Required:

The formal field orders of Major General A, commanding the 1st Cavalry Division, for the advance of his command on 16 March.

DISCUSSION

For a general, commanding a cavalry division which is to screeen the march of an army, to undertake properly his mission it is necessary, first, that he be familiar with the general situation from the army commander's viewpoint.

From the above situation it is seen that only one corps of the army (the 1st) is in actual contact with the enemy. The remainder of the army is probably resting, refitting and recuperating from its defeat in Virginia. The Blue army was defeated in Virginia, probably due to one of three factors: superior Red numbers, superior Red morale and fighting power, or superior Red leadership.

The Blue army commander has ordered a return to the offensive by the bulk of the Blue army. He must have estimated that, due to the separation of the Red forces by the Potomac River, he will have a sufficient preponderance of forces in Maryland to insure success and that their condition of morale, fighting power, and leadership are such that they will not detract from his chances of success.

From the army commander's viewpoint the offensive might have taken any one of three directions:

(a) He might have struck due south with his whole army.

Advantages: Simple plan. Permits him in case of success, to continue the fight on hostile soil. There is a chance of catching the enemy astride the Shenandoah River.

Disadvantages: The Potomac, especially now, is a formidible obstacle to cross in the face of the enemy's main forces; the left flank of the line of communications of the Blue army is exposed; a strong retaining force must be left north of the Potomac.

(b) He might have struck in the direction Frederick—Washington.

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Advantages: He separates the Red forces in Maryland from their main army.

Disadvantages: He will probably have to debouch from the gaps in Parrs Ridge to move to the attack, if, indeed, he does not actually have to attack the enemy after finding him in possession of Parrs Ridge; he is cramped for room to deploy three corps between Mt. Airy and the Potomac; the enemy cuts his line of communications to Perryville and possibly to York. The enemy is enabled to use Baltimore as an advanced base for debarking his troops and extending his operations in Maryland.

(c) He contains the enemy main forces along the Potomac and strikes the right of the Red detachment in Maryland (this is the course chosen).

Advantages: The Red detachment can receive least help from its main army; the communications of the Blue army are covered as well as possible; it probably will have a preponderance of numbers on the battlefield; in case of success the Red force will be pushed back against the Potomac and will be embarrassed in recrossing; Baltimore can be denied to the Reds as an advanced base.

Disadvantages: The longest marches offered by any of the three plans; his containing force may be defeated, but this is improbable due to the state of the river.

He retains his cavalry division directly under his own orders. This division directly covers the advance of the 2d and 3d Corps. The march of the 4th Corps is farther to the east, and is covered by the corps cavalry, united as a provisional division. The 1st Cavalry Division will be from 30 to 50 miles in advance of the 2d and 3d Corps on the night of March 16th. Had the formation of the army been such that the cavalry division had a mission of reconnaissance, immediately preceding the advance of one corps which was covering the advance of the army, the cavalry division might well have been placed under the orders of the corps commander. One will see that the cavalry division commander in the present case, however, will obtain much information of immediate import to the commanders of the 2d and 3d Corps, and he must arrange for the prompt transmission of this information to them.

The Cavalry Division Commander's Estimate of the Situation

Mission: His mission is to advance in such a manner that he can seize Parrs Ridge from the Liberty Turnpike to the Potomac, and in so doing to screen the march of the

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bulk of the army to the east and south. He is to prevent any hostile forces from crossing the Potomac near the mouth of the Monocacy and interposing themselves between the three marching corps and the 1st Corps, which guards the upper reaches of the river. He is to be prepared to make a demonstration towards Rockville on March 17th. Why? Obviously to draw the reserves of the Red force in Maryland to the west, and create the belief that the Blue army intends to strike in the shortest direction—Frederick—Washington.

His screening mission demands that his advance shall be spread out so that all lines of infiltration of hostile ground reconnaissance units shall be closed. The enemy, when he finds his reconnaissances blocked at all points, will undoubtedly concentrate at selected critical points to endeavor to penetrate the screen by force. General A's formation, therefore, must be such that he can readily reinforce at these critical points to throw back the enemy's reconnaissance parties and prevent their gaining points of good observation. A mission of screening cannot be separated from the duty of reconnaissance. General A knows that he cannot effectively screen if he is in ignorance of the whereabouts of the enemy's elements which will endeavor to penetrate his screen. Putting himself in the army commander's position, he realizes that battle plans are yet to be made, and much of the information on which they are based must come from his division. Therefore, although his orders do not specifically direct reconnaissance, the cavalry commander will recognize it as a fundamental duty—in this case of much importance—and will embody it in his orders. Its effect will be to increase the number of patrols that are sent out, and to increase the distance to which they will be sent.

The Enemy: General A was informed by the army of the crossing of the one Red corps at Washington on March 11th. Four days have elapsed since then. So far as logistics are concerned, the enemy has had time, if he desired, to cross three or four more corps over the four bridges near Washington. Against this assumption there is the army commander's decision. Had he believed the bulk of the Red

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army to be in Maryland, he probably would not have left one-fourth of his infantry strength watching the upper Potomac. Washington is in friendly territory. The Blue army would have a poor intelligence system if it produced accurate reports of the movements of one corps across the bridges and then failed to obtain any report at all of double or treble that force. The army, too, by means of its distant air reconnaissance should have been able on account of the traffic on roads and railroads to catch positive indications of such movement. That there has been some increase seems possible, for the enemy only commenced his northward movement on the 15th, and it does not take four days to cross one corps on four bridges. The Red corps is assumed to have two regiments of cavalry. A cavalry division from the army may be with it. A Red force in transports has appeared off Baltimore. Cavalry is not likely to be included in this force, as horses take up too much room on ships. Only small cavalry detachments are reported late on the 15th as being in Cooksville and near Baltimore. There are no reports of hostile larger cavalry bodies. The infantry columns of the enemy, on the other hand, have been quite accurately reported as reaching Rockville, Laurel, and the Patuxent River. General A therefore judges that he will encounter in Maryland the elements of a reinforced army corps.

The Red cavalry at Cooksville is within 2 hours' march of Parrs Ridge. The Blues could hardly beat it there even if they were ready to start on the receipt of General A's orders. The Red infantry at Rockville is within 6 hours' march of Parrs Ridge.

His Own Troops: The 1st Cavalry Division is quite scattered. It has, however, a number of different roads on which to advance. The fact that the 1st Cavalry Brigade is spread out on a front of about 10 miles will make for slower distribution of orders, and will consume time before that brigade can get onto the roads.

His most advanced troops are 12 miles from the nearest point on Parrs Ridge; this is on the southern flank. On the northern flank the 1st Cavalry Brigade and the 3d Brigade are 25 and 28 miles respectively from the ridge.

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In addition to his division, General A has been given one regiment of infantry and one battery of artillery carried in motor trucks. One reason why the army attached the infantry is obvious at once; it is to be given the defensive mission of holding the north bank of the Potomac between Point of Rocks and the Monocacy. This distance is 6 miles, and behind such an obstacle as the Potomac in flood the mission can be performed by less than one regiment, particularly if it has artillery support. General A believes that if infantry can even be seen marching in the vicinity of the demonstration which he is ordered to make on March 17th, it will do much to make the enemy believe that it is a serious threat. The situation may develop also so that in order to make any appreciable advance in the direction of Rockville, it will be necessary to engage some of his infantry. The best use of the battery of artillery in motor trucks is not so clear. The characteristic virtue of these guns is their transportability rather than their mobility. Artillery serving with cavalry does not have the same security from close incursions by the enemy that it does when serving behind an infantry battle line. This is particularly true when the cavalry is opposed by cavalry. Mobility of guns is therefore of great value in this case. To be really mobile, the motor-carried guns would always have to be emplaced practically on a metalled road and their trucks kept within short distance; the guns must be placed in battery far enough apart so that the trucks may have room to move up to them, turn around and load, or in case of emergency trail the guns to a new position or to a place of safety. Therefore General A believes that, in the first instance, these guns should be sent to the support of the infantry on the river; thereafter, if a fire fight situation develops that has sufficient stability of formation to permit or demand their use with the cavalry, their transportability will enable them to reach the scene of action in a short time.

The 2d Corps is marching from the region of Waynecastle toward Thurmont on March 16th. The cavalry division columns and trains must not block the march of this corps.

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If General A once reaches and holds Parrs Ridge, the army orders seem to give a different character to the two flanks of his front. On the left, northeast of Mt. Airy, his attitude will be more strictly that of screening, pure and simple; his main effort will be devoted to preventing the enemy's reconnaissance, while maintaining active patrolling himself. On the right, to the southwest of Mt. Airy, he is to carry out a demonstration on March 17th. This requires a much more energetic search for information, particularly local information. It requires an aggressive attitude throughout. Any ground gained to the south must be held as a foothold for further operations.

The army air service will co-operate in the demonstration on the 17th. In order to have the most success and to attract as many enemy troops as possible to that direction, it is necessary that the operations of his own air squadron fit in with those of the army squadron, and that the cavalry and the air service of the army each understand the time, direction and objectives of the other, and that they be co-ordinated.

Terrain: On Parrs Ridge a front of approximately 29 miles is to be seized. The division must debouch from a range of hills, cross a broad valley and climb again into rolling hills.

The army commander's object in specifying that Parrs Ridge must be seized was undoubtedly to deny to the enemy the highest points for observation of the Blue columns in the rear. General A sees that his general map is entirely too indefinite to permit the accurate defining of points on this ridge. By study of the 1:62500 map the ridge is seen to run as follows: From Taylorsville on the Liberty Turnpike southwest along the ridge road through Mt. Airy, Parrs Spring, and Clagettsville to Damascus; through hill 802 to Clarksburg; west along the Comus Road to hill 575; southwest through Sellman, Beallsville and Martinsburg to the Potomac.

There are four main routes that lead from the Catoctin Mountains to the Monocacy, particularly in the southern part of the front of advance; however, additional minor routes can be utilized. There are 12 bridges over the Mono-

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cacy between the Thurmont—Woodsboro road and the Potomac. After crossing the Monocacy a network of roads leads in the direction of Parrs Ridge, so that the road sitaution readily lends itself to the work of contact troops in thoroughly intercepting the enemy's ground reconnaissance. The 29 miles of front will require that approximately 15 troops be deployed on the front of advance.

Sugarloaf Mountain, which is closer to the enemy than Parrs Ridge, is obviously of great importance for observation. It dominates the whole country. Special measures must be taken to secure it.

Plans: General A can push out the 1st Cavalry Brigade to seize Parrs Ridge on the entire front designated, and can follow it with the remainder of the division in two main columns. This offers a slightly shorter march to reach the northeast end of the front assigned. His screen will be thin however; his strength will be equally balanced, and he will not have a preponderance of his strength on his south flank on the 17th without additional flank marching.

General A can advance with three brigades abreast. He discards this plan, as the 2d Brigade is too far to the west and would delay the movement.

He can advance with the 3d and 1st Brigades in line, each covering about one-half of the front; the 2d Brigade following as reserve in such a position as to be readily diverted to the support of either brigade in front.

He adopts the last plan, specifying that the reserve brigade will follow behind the 1st Brigade, where, if circumstances develop according to plan, it will be in position to assist in the work on the 17th. The infantry will be sent to hold with two battalions the north bank of the Potomac, while one battalion will be placed where it can either prolong the infantry line or support the cavalry demonstration.

The following order is issued:

1st Cav Div,
SMITHSBURG,
16 Mch 20, 1:30 AM.

FIELD ORDERS
No 1

Maps: General Map, Gettysburg-Antietam, 1"=10 miles.
Geological Survey, 1:62500, Gettysburg—Rockville—Chambersburg Area.

1. The hostile force which occupied WASHINGTON on Mch 11th is apparently extending toward the north. Red cavalry was reported late yesterday in COOKSVILLE and near BALTIMORE. Heads

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of hostile infantry columns are known to have reached the line ROCKVILLE—LAUREL—PATUXENT RIVER. Red transports have been seen off BALTIMORE.

Our army leaves the 1st Corps in observation on the north bank of the POTOMAC from POINT OF ROCKS to the west and moves with its bulk tomorrow toward the line LIBERTYTOWN—REISTERTOWN to strike the right flank of the Red forces in MARYLAND.

The 2d and 3d Corps reach today the line THURMONT—ZORA—ORRTANNA—CASHTOWN, and the 4th Corps reaches the line LITTLESTOWN—HANOVER.

The cavalry of our 3d Army Corps is concentrated in front of the 4th Corps.

2. This division, reinforced by the 1st Inf and Btry A, 100th LA (carried in motor trucks), advances today, with the 1st and 3d Brigs abreast to seize PARRS RIDGE from TAYLORSVILLE on the BALTIMORE—LIBERTYTOWN road, to the POTOMAC, screening the movement of our army to the east and south, and preventing any enemy from crossing the POTOMAC between POINT OF ROCKS and the MONOCACY. On its right it will prepare to carry out a demonstration on Mch 17th in the direction of ROCKVILLE.

Boundary line between brigades: MOUNTAINDALE—BARTONSVILLE—IJAMSVILLE—DAMASCUS (all to the 3d Brig on the north).

Troops	
(a) 3d Brig columns: Brig Gen D 3d Cav Brig 3d Bn, 1st HA 3d Amb Co	(a) The 3d Brig columns will start at 5:30 AM via the THURMONT—WOODSBORO — LIBERTY TURNPIKE and the CATOCTIN—DEVILBLISS BRIDGE—NEW MARKET—MT. AIRY roads. They will seize PARRS RIDGE on the line TAYLORSVILLE—MT. AIRY — DAMASCUS, preventing any hostile movement toward the northwest. They will patrol vigorously along the south branch of the PATAPSCO and toward COOKSVILLE and OLNEY to gain contact with the enemy, and will get in touch to the north with the cavalry of the 4th Corps. The 3d Bn 1st HA will reach FOXVILLE at 5:00 AM.
(b) 1st Brig columns: Brig Gen B 1st Cav Brig 1st Bn, 1st HA 1st Amb Co	
(c) 1st Inf column: Col E 1st Inf Btry A, 100th FA	
(d) Reserve Column: Brig Gen C 1st MG Sq 2d Cav Brig 1st HA (less 1st and 3d Bns) 1st Bn Mtd Engrs	(b) The 1st Brig columns will start at 7:00 AM via FREDERICK and ADAMSTOWN to secure the crossings over the MONOCACY from BIGG'S FORD BRIDGE to the south; they will guard those north of BARTONSVILLE till the arrival of the 3d Brig. Swinging their left forward with the 3d Brig, they will seize PARRS RIDGE on the line DAMASCUS—CLARKSBURG—SLIDELL preventing any hostile movement toward the northwest, and driving the enemy's reconnaissance south of GREAT SENECA CREEK. Contact squadrons will be sent aggressively forward toward the line GAITHERSBURG—HUNTING HILL—NEW CUT ROAD seeking contact with the Red infantry. One sq will trot out ahead at 5:30 AM to seize and hold observation points on SUGAR LOAF MOUNTAIN. It will send officers' patrols toward ROCKVILLE and OLNEY.

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The CG 1st Brig will make arrangements to cover the advance of the 1st Inf from CRAMPTON GAP to ADAMSTOWN and DICKERSON.

(c) The 1st Inf will march at 5:30 AM via JEFFERSON to ADAMSTOWN. The regiment (less 1 bn) will, from the heights north of the POTOMAC, prevent Red forces from crossing the river between the MONOCACY and POINT OF ROCKS (exclusive).

One bn will be sent forward to DICKERSON where it will come into division reserve.

Btry A 100th LA will march from BOONSBORO via KEEDYSVILLE and BURKITTSVILLE to ADAMSTOWN, to arrive at ADAMSTOWN at 10:30 AM reporting to the CO 1st Inf.

(d) The division reserve will march provisionally to FREDERICK via BOONSBORO. Head will start from BEAVER CREEK at 7:00 AM.

(e) See Annex No 1, Air Service.

The 1st Obsn Sq will carry out close and long distance reconnaissance in front of the 1st Cav Div. Messages will be dropped at the division and 1st and 3d Brig command posts. Two command planes will be held in readiness throughout the hours of daylight. The sq will move to the FREDERICK airdrome and be ready to operate by 8:00 AM, 16 March.

4. (a) One F Hosp (motor) will clear BEAVER CREEK at 7:00 AM to follow the 1st Cav Brig to FREDERICK. Evacuation to FREDERICK.

(b) F Tns:

3d Brig: To follow the brigade provisionally to LEWISTOWN.

1st Brig: To be assembled south of FREDERICK. Their march must not block the march of the division reserve on the MIDDLESTOWN TURNPIKE.

1st Inf: To follow the regiment.

Div reserve: To follow the column.

(c) The Sup Tn will move from SMITHSBURG via PENN MAR to THURMONT starting at 5:00 AM.

(d) Division trains and MP (less Sup Tn, 2 amb cos (mtz), and 1 F Hosp, (mtz) will move under command of CO Tns to FREDERICK following the 2d Brig. Motor units will not leave SMITHSBURG before 12:30 PM.

(e) Railhead: THURMONT, beginning 16 Mar.

5. (a) Plan of signal communications: Changes follow affecting 1st Inf and Btry A, 100th LA only.

(b) Axes of signal communications:

1st Cav Div: SMITHBURG—BOONSBORO—BRADDOCK HEIGHTS—FREDERICK—HYATTSTOWN—GAITHERSBURG.

1st Brig: Same as 1st Cav Div.

3d Brig: FOXVILLE—THURMONT—FREDERICK—NEW MARKET RIDGEVILLE—LISBON.

(c) Command posts: 1st Cav Div: Will close at SMITHSBURG at 9:00 AM and open at FREDERICK at the same hour. Advanced command post at BRADDOCK HEIGHTS from 7:00 AM.

Brigades: Enroute. New locations to be promptly reported.

A,
Maj Gen.

Annex No 1: Air Service.

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Copies to:

1 CG	17 CG 3d Cav Brig
2 C of S	18 CO 1st HA
3-4 G1	19 CO 1st MG Sq
5-6 G2	20 CO 1st Inf
7-8 G3	21 CO Btry A 100th LA
9 Adj	22 CO 1st Obsn Sq
10 Sig O	23 CG 1st Army
11 Surg	24 CG 1st Corps
12 CO Tns	25 CG 2d Corps
13 Div Engr	26 CG 3d Corps
14 DMGO	27 CG 4th Corps
15 CG 1st Cav Brig	28 War Diary
16 CG 2d Cav Brig	29-30 Spare.

In the plan of signal communications of the 1st Cavalry Division now in force, special arrangements are made to insure communication with airplanes, particularly when the columns are moving.

Each brigade command post carries its panels at all times displayed on the top of a light motor car. This car has orders, on halting, to select a place in the open near the road and only to move under cover when the presence of hostile planes is positively known. Messages containing information of immediate importance to the leading brigades are dropped first at their command posts, copies being dropped later at the division command post. Only exceptionally is information dropped forward of the brigade panels. The observers of the 1st Observation Squadron are specially instructed in picking up new missions from brigade and division panels.

The Use of Contact Troops and Patrols

Both of the terms "contact squadrons" and "contact troops" are found in American cavalry texts.

Owing to the size of our organizations, the troop will probably be used in contact work more than the squadron. The presence of the term "contact squadron" is thought to be largely due to a too literal translation of the French word *escadron* and the German word *eskadron,* both of which mean a troop—a captain's command.

The use of contact troops presumes two things:

(a) The employment of a comparatively large cavalry force.
(b) The employment to screen the movement of a force in rear of the cavalry, the presence of which it is desired to keep from the enemy's knowledge, or to scour the country for information, which is generally intended primarily for the use of the troops in rear.

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A cavalry column on the march, independent of other forces, puts out its security and reconnaissance groups in the same manner as does an infantry column under similar circumstances. It marches with point, advance party, support, reserve when the circumstances warrant, and sends out its flanking patrols to provide lateral protection and to search for information. The only difference is that since the cavalry echelons of the advance guard have more mobility and less resisting power, the distances are usually greater than those of infantry units of corresponding size. The information gained in such cases is primarily for the use of the cavalry column itself. The protection is for itself alone.

A squadron marching alone may put out one troop as support; the troop may push out one platoon as advance party; the platoon pushes forward one set of fours as point. Flanking patrols are sent out to points of observation, or to examine dangerous points within rifle range—say, within 1 mile of the line of march. Now, if, under proper circumstances, the squadron detaches a troop to march on a parallel road 2 miles away, this troop is, with respect to the squadron, a flank guard; the troop provides its own security, point, advance party, flanking patrols.

Now, considering this squadron as one of many squadrons advancing practically abreast, there results a cavalry screen. The advance guard troop and the flank guard troop become contact troops. They are the moving nuclei of their patrols. They may or may not be abreast of one another. As long as they are moving forward they should both be in advance of the remainder of the squadron, in order to permit it to have maneuvering room to come to their support. Within a certain zone assigned to the squadron to cover, they will move in general rather than fixed directions. They move forward from point to point with a small security detachment immediately covering their march. Their march will be governed by the lie of the country, by the roads or trails or stream crossings available, and by the resistance met by their patrols. Within the zone assigned, they will deviate, or will send smaller echelons—platoons—to back up or assist patrols that find their progress barred by a stronger hos-

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tile group, or that are driven in by the advance elements of a hostile force seeking to penetrate the screen.

Because of this liability, on the part of the contact troops, to deviate from a fixed line of march, the main body of the squadron puts out additional close protection for itself directly on its line of march. If there are two troops remaining in the main body, the size of the protecting force sent out can be less than that used by two troops marching alone, because of the protection afforded by the contact troops. This force is only to protect the main body of the squadron from being fired into at close range, by a small hostile patrol which might have filtered through, or to prevent its march being delayed by an obstacle which a few men might have removed, or at least indicated, so that the troops could march around it without loss of time. The main body of the squadron, within its zone of advance, deviates and maneuvers in a similar manner to that described above, to assist or back up a contact troop which, from one cause or another, has found resistance that it cannot overcome alone.

A squadron may send out one, two, or three contact troops, according to the width of the zone assigned to it, the number of routes of advance or approach through this zone, and the attitude and proximity of the enemy. Some squadrons in the screen may find themselves practically confined to a single road and may content themselves with merely their advance guard on that road and the flanking patrols which might be sent out.

The governing idea in all echelons of the screen—troop, squadron, regiment, brigade, division, is the covering of a front of advance by small groups at the same time keeping a very mobile reserve well in hand, ready to reinforce the critical points in front. The reinforcement should be made with a minimum of mixing of commands.

Wagner says, "Above all is the consideration of rapid concentration." This points out the desirability of good lateral communications and the dependence of the formation of the screen upon the lateral communications.

By "lateral communications," roads are not necessarily meant. The country itself may be sufficiently open for

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cavalry to move easily off the roads. The larger bodies, the regiment and brigade, will use roads, when they are available, for their ordinary forward movement, because their progression is steadier and uninterrupted on the road. However, contact troops, and the leading squadrons will necessarily move across country to a great extent. If the footing is good and the fences reasonably few, the smaller bodies can make quite the same speed off the road as they can by following it. Where concealment of the march of the cavalry is a factor the roads will be less used, even by large bodies, as they are the places to which the eyes of hostile aviators and hostile cavalry scouts are at once attracted. Moving in the dark, cavalry is practically confined to the roads, and in wet weather the ground across country quickly becomes so water-soaked as greatly to cut down the speed of mounted troops and to make the use of the road preferable.

As to frontage and distance: The average front that a troop can cover in the above manner is taken to be about 2 miles. One mile to one side is the approximate distance to which a mounted patrol can go, observe, and send its information or return to a moving column without wasting its horseflesh. In this situation information is 7 minutes old when received by the troop commander. The patrol can be reinforced from the troop within the life of its independent resistance, 7 to 10 minutes.

A squadron should cover from 4 to 6 miles; a regiment from 8 to 12; a brigade from 15 to 20; a division from 25 to 35 miles.

To increase the frontage in direct geometrical progression operates, in the case of the larger units, against the rapid transmission of information, and the marches become too long for reserves to intervene on the same day.

The distance from the contact troops to the main bodies of the leading squadrons depends on the same factor, namely, ability to reinforce the contact troops within the life of their independent resistance. The condition of the horses, the length of the march, the character and attitude of the enemy, the weather, the condition of the roads, the availability of short cuts, will all affect it.

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As one goes back to the larger units the distance is more and more affected by the width of frontage covered. Five miles would seem to be a maximum distance to the reserve squadron of a regiment.

When good maps are available there is little difficulty in maintaining the direction of the advance. The zones assigned to the regiment and squadrons can be easily indicated. However, when poor maps only, or possibly none, are available, the marching must be directed on prominent points or the compass direction must be given. A certain troop in the squadron, or a certain squadron in the regiment follows the indicated direction or compass course, while those away from the guide unit regulate on it and maintain contact by means of patrols. When cavalry marches by compass direction or upon prominent points, frequent halts are necessary to readjust to the compass course, or to pick out new direction points after the old ones are passed.

On halting at night, the tendency will be for the larger units—squadrons and regiments—to come together for the control of important centers, for convenience of camping and supply, and for economy of security detachments.

Where important routes cannot be watched by the outposts of these larger bodies, or where the enemy is so distant that contact cannot be kept by patrols from their outposts, contact troops are left in advance during the night to secure these ends. In this way cavalry insures continuous contact and observation, and this is one of its functions that the air service can neither assume nor assist in.

A cavalry command, as a screen, covers such a broad front that its outposts cannot be continuous. However, the main approaches are blocked. Only small hostile patrols might filter through in the night, and in the darkness these stand little chance of seeing anything of importance behind the screen and of getting back with information before day.

Patrols: To divide the patrols sent out by a cavalry unit, whether it is marching independently or as a part of a screen, into tactical and strategical, into those sent to find the hostile cavalry patrols, the hostile cavalry main body, or the hostile infantry, or into officers' patrols or pa-

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trols led by noncommissioned officers, seems to be misleading.

It would seem clearer to divide them into two classes:

(a) Local patrols.
(b) Patrols with special missions.

The former (a), which include the point, "have both offensive and defensive characteristics.

"They are sent in the direction in which one expects to find the enemy, or

"They are sent to guard against surprises where one does not expect to find the enemy."—Haig.

They have an inherent duty of covering the force that sent them out.

They go to such a distance, one mile or two, that the information which they send in by mounted men is practically fresh, and the unit which sent them out can exert its influence on the situation described in the information with practically no delay.

They are largely detailed by roster, or other equitable methods, from the unit.

The latter (b), have a specially assigned mission.

They are instructed and sent out by the commander whose viewpoint, owing to his command, is of sufficient breadth to enable him to judge of the importance of the mission, and renders him competent to give the orders for its execution.

Their information may be hours old on receipt, and such as to affect the plans of the whole command. They may be a day's march or more ahead of the command.

They have no duty of covering the command.

They are usually specially detailed and specially mounted; sometimes specially equipped.

Their value lies in the eyes and judgment of the leader. The remainder of the patrol is added as his bodyguard and couriers, and the strength of the patrol depends on the requirements of the situation with respect to those two things.

In addition to the employment of patrols, cavalry, frequently, makes use of scouts. These men, to be of value, must have natural aptitude and much actual training in war. They are particularly trained to recognize by signs

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the number and direction of marching troops, to know the relation of numbers to length of column, of numbers to size of camps; to recognize at a glance the practicability of roads; and to find their way in difficult country and by night. Some very famous scouts have preferred to work singly. As a rule, however, they do better work if sent in pairs. They may be gone from the command for several days. Their success depends entirely upon their ability to conceal themselves. In friendly country their operations are much facilitated; as they must travel light and with little protection and must frequently be exposed to the elements through long periods. Warm weather facilitates their employment. They avoid main routes, frequently lie hidden in the day, and cover long distances at night. Due to their particular training, they are able to penetrate a hostile screen or outpost under circumstances where a patrol composed of less skillful men would be stopped. The allowance to the cavalry regiment of the same intelligence personnel that the infantry regiment now has, permits the building up of a body of men with the requisite skill and training.

Air Service

The mission of the 1st Cavalry Division is to screen the bulk of the 1st Army while it is taking up a position from which it will launch an attack, and to prevent the enemy from crossing the Potomac between Point of Rocks and the Monocacy. In addition, on the 17 March 20, it must carry out a demonstration in the direction of Rockville. The 1st Observation Squadron must assist the cavalry in obtaining information for the army commander, and must also aid the cavalry commander as much as possible by keeping him informed of what is in front. The mission of the squadron, then, is purely one of reconnaissance, both close and distant. The information it gathers is of no value unless quickly given to the command posts directly concerned. In this problem, then, it is also necessary for the squadron to deliver the information to the division, and to its brigades, especially the 1st and 3d. It might also be called upon to act as a courier between division headquarters and army headquarters.

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The Enemy

Little is known concerning the Red air force accompanying the enemy force which has crossed the Potomac. It has been reported that the Red force has some pursuit squadrons and it is reasonable to suppose so, because the Reds would hardly dare to carry out such a movement without them. If the Blues should detect their movement and concentrate a few pursuit squadrons against their observation units, the Reds would practically be blinded. Also, from the use the Reds are now making of their air service south of the Potomac, it is certain they have few pursuit squadrons in that vicinity, otherwise they would keep up their offensive patrols. We are therefore led to believe that the Reds have divided their air forces.

Up to the present the location of the Red airdromes is not known, but this is not of so much importance as the location of the Red troops, and in the short period of time available it will not fall to the lot of the 1st Observation Squadron to locate the airdromes. If, during the reconnaissance missions of the squadron, the airdromes are located, so much the better, but in this situation the squadron would not seek for them.

Since the information in regard to the Red aircraft with this hostile force in the vicinity of Washington is so scarce, it is very probable that the Reds are holding their air service down, in order not to attract the attention of the Blues any more than can be avoided. The Reds, no doubt, are using their observation planes in the normal manner, but are concealing their pursuit planes until forced to use them. This would tend to make their force appear smaller than it really is. However it is safe to assume that the Reds have their pursuit planes on the alert, and that they are ready to take the air and deal with any reconnoitering Blue planes. The long distance reconnoitering machines of the 1st Cavalry Division will no doubt be forced to fight their way when detected.

The Friendly Air Forces

The 1st Army air service has been split up and on March 16th, it will be a case of the 1st Observation Squad-

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ron fighting its own battles. One pursuit group is with the 1st Corps on the north bank of the Potomac, one pursuit group and two day bombardment squadrons have been ordered to participate in the cavalry demonstration on March 17th, and the remaining army air service units are accompanying the bulk of the 1st Army.

The 1st Observation Squadron has been recuperating lately; it has had time to fill up with replacements, and is in perfect shape to undertake the task in front of it. Considering that it has 18 machines in commission, it ought to be able to do two days of very hard work.

Since the information concerning the Red force in question is so scarce, it is practically necessary for the 1st Observation Squadron to cover all the territory in front of the line Taylorsville—Mt. Airy to the southern end of Parrs Ridge, thence to Point of Rocks, to the line Baltimore, Washington and Leesburg. This is an enormous territory for one squadron to reconnoiter thoroughly in such a short time. However, by working the crews overtime it can be done.

For a distance of 5 or 6 miles in front of the line Taylorsville—Mt. Airy—Damascus—Slidell, the territory must be thoroughly combed, and as the cavalry pushes farther forward, the aerial line must advance correspondingly. Machines should be over this territory all the time after the cavalry arrives. They must fly low enough to recognize the Blue and Red forces, and they must also report frequently by dropped messages to the command post of the brigade in front of which they are operating, in order to keep commanders informed of the location of their own troops, and also as to what enemy troops are in the vicinity. This close reconnaissance and quick, direct reporting of hostile movement directly in front, will be of the greatest assistance to the cavalry brigade in combat. This work is hard, tedious and dangerous, and it will require perseverance on the part of the pilots and observers. The cavalry brigades have radio with which they can notify the airdrome of their new locations. Should the radio for any reason fail to work satisfactorily, it will be difficult to find in all cases the location of the brigade command posts when they are on the move. Accurate identification will not only neces-

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sitate well laid plans before starting, but patience and perseverence on the part of the observer if the brigades are to receive messages.

The observers will be forced to search carefully for the command posts and will probably have to fire several call signals before they can locate them.

The panel detachments with brigade command posts must be keenly on the alert at all times, whether on the move or not, and they must quickly answer the airplane call by displaying the identification panel where it can easily be seen by the observer. If it is displayed and the observer evidently does not see it, then it should be moved, and all possible means should be employed to assist the observer in locating it. The members of the detachment should wave their hats and handkerchiefs, or fire a signal pistol; in fact, everything possible should be done to attract the attention of the observer.

Since the airplanes sent on long range reconnaissance will be likely to encounter the enemy's pursuit planes, it is advisable for them to fly high, at least while going, and thus attempt to slip by unnoticed. If conditions warrant, they can come down low on the return journey.

Due to the fact that there is so much territory to be covered by the 1st Observation Squadron, it is hardly possible to employ it in any other way. If the territory was smaller, fewer missions would suffice and in that case each long range reconnaissance machine could be escorted by one machine. But in this particular problem that system cannot be employed.

After considering the points which must be reconnoitered, and the amount of territory to be covered, the decision is made to employ the 1st Observation Squadron as set forth in the following orders:

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ANNEX No 1 to FIELD ORDERS No 1, 1st CAV DIV

AIR SERVICE

1st Obsn Sq,
SMITHBURG,
16 Mch 20, 1:30 AM.

FIELD ORDERS
No 1

Maps: Geological Survey, 1:62500, Gettysburg, Rockville, Chambersburg Area. General Map, Gettysburg-Antietam, 1"=10 miles.

1. The activity of the Red aircraft south of the POTOMAC RIVER has decreased. The enemy is now using a defensive barrage in front of his forces south of the POTOMAC RIVER. Reports state that the Red force which crossed the river at WASHINGTON has with it a number of pursuit and observation units.

   Our air service has been divided. One pursuit group remains with the 1st Corps to protect the 1st Corps observation units along the north bank of the POTOMAC. One pursuit group and two day bombardment squadrons have been ordered to proceed to an airdrome 1½ miles southwest of WOODSBORO to assist the 1st Cav Div in its demonstration on Mch 17th. The remaining army air service units accompany the advance of the army to the front, LIBERTYTOWN—REISTERTOWN.

2. The 1st Obsn Sq moves today from the SMITHSBURG airdrome to the FREDERICK airdrome via the WOLFSVILLE—MIDDLE POINT—HIGHLAND SCHOOL—YELLOW SPRINGS—FREDERICK road, in order to co-operate with the 1st Cav Div.

3. The 1st Obsn Sq will move its echelons as previously planned at 5:00 AM today and will be prepared to operate by 8:00 AM, 16 Mch 20. The squadron will reconnoiter in front of the division in the direction of BALTIMORE — ODENTON—WASHINGTON and south of the POTOMAC from LEESBURG to WASHINGTON. Especial attention will be paid to the BALTIMORE TURNPIKE as far as ELLICOTT CITY, to the UNION TURNPIKE leading south from COOKSVILLE and to the roads leading into ROCKVILLE from the northwest. Local reconnaissance for enemy troops will be made in front of the 1st and 3d Cav Brigs to a depth of 6 miles. The sq will also be prepared to assist in the demonstration on 17 Mch 20. Messages will be dropped at the Div CP, and the 1st and 3d Brig CPs. Two planes will be held as command planes. See Appendix No 1 Employment of 1st Obsn Sq.

4. Div railhead: THURMONT.
   1st Air Dep: GREENCASTLE.

5. Plan of signal communications: No change.
   Dropping grounds and command posts:
   1st Cav Div: BRADDOCK HEIGHTS from 7:00 AM till 9:00 AM, thereafter at FREDERICK.
   1st Cav Brig: 9:00 AM vicinity of FREDERICK.
   11:00 AM vicinity of URBANA.
   2:00 PM vicinity of CLARKSBURG.
   3d Cav Brig: 9:00 AM vicinity of LEWISTOWN.
   11:00 AM vicinity of BARTONSVILLE.
   2:00 PM vicinity of RIDGEVILLE.

Official:
ABC
Adjutant.

A,
Major AS.

Distribution:
Same as Div FO

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APPENDIX No 1 to ANNEX No 1 to FIELD ORDERS No 1
1st CAV DIV

EMPLOYMENT OF FIRST OBSERVATION SQUADRON

16 March 20.

Number of Airplanes	*Hour of Departure*	*Mission*	*Remarks*
One	8:00 AM	Visual reconnaissance	MT. AIRY—COOKSVILLE—ELLICOTT CITY—PATAPSCO—LAUREL—OLNEY—DAMASCUS
One	8:00 AM	" "	TAYLORSVILLE along LIBERTY TURNPIKE to BALTIMORE and return via PATAPSCO RIVER to SYKESVILLE—DAY—WEST FALLS
One	8:00 AM	" "	HYATTSTOWN—GAITHERSBURG—ROCKVILLE along GEORGETOWN TURNPIKE to WASHINGTON and return via SCOTLAND—DARNESTOWN—DAWSONVILLE—BARNESVILLE
One	8:00 AM	" "	LEESBURG—WASHINGTON—ANNAPOLIS JO—ROXBURY MILLS—LONG CORNER
The above missions will be repeated at	3:00 PM	" "	
One	10:00 AM	" "	In front of line TAYLORSVILLE—MT. AIRY—DAMASCUS to a depth of 6 miles
One plane on the above mission			Every 2 hours thereafter.
One	10:00 AM	" "	In front of line DAMASCUS—SLIDELL to a depth of 6 miles.
One plane on the above mission every 2 hours thereafter.			
Two planes will be held as command planes.			
Two planes will be held on the alert.			

A,
Major AS.

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PART II

Situation (Continued):

During March 16, the 3d Brigade advanced in two main columns through Woodsboro and Walkersville; the brigade reserve, the 9th Cavalry, 4th Machine Gun Squadron and 3d Battalion, 1st Horse Artillery, followed the right column.

The 1st Brigade seized Sugarloaf Mountain without opposition, and its columns advanced through Bartonville and Ijamsville, and through Urbana and Hyattstown. The brigade reserve, the 3d Cavalry, 2d Machine Gun Squadron and 1st Battalion, 1st Horse Artillery, followed the left column.

The head of the division reserve reached Frederick at 1:00 PM.

A resume of the information that has reached General A during the course of the day is as follows:

About 9:00 AM the planes reported infantry columns marching through Gaithersburg and Olney, and many trucks on the Rockville—Washington road moving in both directions.

About 10:00 AM cavalry patrols were encountered on the line Unionville—New London, and on the line Bartholows—Ijamsville—Urbana. The former were driven east, the latter south. The air service reported cavalry marching west through West Falls.

About noon a Red cavalry regiment was attacked by the 3d Brigade near Linganore. It held its position east of Woodville Branch until 4:00 PM, and the combined effort of the 7th and 8th Cavalry and of the brigade artillery was required to dislodge it.

A Red squadron which had been supporting the patrols near Urbana was driven south from Hyattstown through Blocktown, closely pursued by the 1st Cavalry.

At 2:00 PM a plane reported a Red cavalry column, estimated at one regiment, moving north through Hood's Mills. At 4:00 PM parts of this force were seen to be bivouacking near Winfield.

At 4:00 PM General A is informed by telegraph that the cavalry of the 4th Corps has reached the line of the W. M. R. R. from New Windsor through Westminster to Ebbvale; that southwest of Westminster it is actively opposed by Red cavalry; that east of Westminster it has encountered nothing, though an officers' patrol has been in Parkton.

By 6:00 PM he konws that the rear guards of a Red cavalry regiment are retiring east through Woodville; that a Red detachment holds the bridge 2 miles east of Ridgeville on the Frederick Turnpike; that the progress of his patrols has been stopped by parties of the enemy's infantry along the line Laytonsville—Brink—Germantown—Old Germantown; that the Red squadron which retired through Blocktown took up a position near Dawsonville and stopped the pursuit of the 1st Squadron, 1st Cavalry.

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From statements of prisoners and identifications made during the day, General A believes that the cavalry east of the Potomac consists of the 1st Red Corps cavalry with one brigade of the 1st Red Cavalry Division.

At 8:00 PM, locations of General A's command were as follows:

Division command post, Urbana.
Reserve column: On Fahrney Branch east of Urbana.
1st Brigade: Command post, Hyattstown.
3d Cavalry and 1st Battalion, 1st Horse Artillery, near there.
1st Cavalry: Command post and 3d Squadron at Barnesville.
1st Squadron north of Dawsonville.
2d Squadron, Blocktown.
2d Cavalry: Command post and 3d Squadron, near Browningsville.
1st Squadron, Clarksburg.
2d Squadron, Damascus.
3d Brigade: Command post, Bartholow.
9th Cavalry near there.
3d Battalion, 1st Horse Artillery, at Plane No. 4.
7th Cavalry: Command post, Lingamore.
3d Squadron near there.
1st Squadron, Woodville.
2d Squadron, McDonald.
8th Cavalry: Command post 1 mile west of Ridgeville.
1st Squadron, Mt. Airy.
2d Squadron, Clagettsville.
3d Squadron, Ridgeville.

Contact troops have been sent out from the nearest squadrons to Taylorsville, Long Corner, Bootjack, Cedar Grove and Neelsville.

1st Infantry (less 1 battalion) and Battery A, 100th Light Artillery, are along the Potomac south of Adamstown.

3d Battalion, 1st Infantry, is at Dickerson.

1st Cavalry Divisions trains are at Frederick.

A 8:00 PM, General A received the following telegram:

1st Army,
16 March 20, 7:30 PM.

To CG, 1st Cav Div:

Enemy cavalry moved north today from COOKSVILLE toward MT. AIRY and WESTMINSTER, and from BALTIMORE toward OWINGS MILLS and REISTERTOWN.' His infantry locations as follows: 1st Div north of ROCKVILLE, 2d and 3d Divs along MIDDLE PATUXENT RIVER northwest of ANNAPOLIS JC. Unidentified division, believed 4th, north of KENSINGTON. Reported two divisions on south bank POTOMAC between AQUEDUCT and CHAIN BRIDGES (requires verification). Our infantry reaches line WOODSBORO—WESTMINSTER—PARKTON tomorrow. 4th Corps Cavalry operating north of LIBERTY TURNPIKE drives enemy cavalry south of OWINGS MILLS tomorrow. You will demonstrate as planned toward ROCKVILLE to draw enemy's reserves to his west flank. Railhead unchanged. 1st Army command post, GETTYSBURG after midnight 16-17 March.

By command of Lt Gen A:

X,
C of S.

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Required:

The field orders of Major General A, commanding 1st Cavalry Division.

ESTIMATE OF THE SITUATION

Mission: The mission of General A's command, in its main points, has not changed.

The duty of screening the southward movement of the three Blue army corps continues. Reconnaissance must be kept up. He must endeavor to find out for the army commander the flanks of the larger Red units and the attitude of the Red force as to further northward movement.

Particularly on his extreme left, it would seem that there is danger of his screen being penetrated, and of the march of the 2d and 3d Corps being observed by Red cavalry patrols.

The locations, in general, of some of the large Red units are becoming fixed. If their directions of march can be ascertained tomorrow, the locality of the impending collision between the Red and Blue armies can be very definitely foreseen by the Blue army commander.

In order that as many Red troops as possible may be held in the region of Rockville, the army has confirmed its previous orders regarding the cavalry demonstration toward that point. This demonstration must be sufficiently vigorous to make the 1st Red Division believe that it is seriously attacked, and that there is infantry moving south directly behind the covering troops of the cavalry division.

Enemy: The enemy's intentions seem to be to continue his north and eastward movement, extending his bridgehead at Washington.

The corps that crossed at Washington has now been definitely developed except for one division, of which there is doubt only as to its numerical designation. If it is not the 4th Division, then the 4th Division also must be looked for east of the Potomac. The two divisions reported as possibly being on the west bank of the Potomac at Washington, must be watched if possible, during the night, and their crossing hindered.

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As to the Red cavalry, one squadron is known to be near Dawsonville; one regiment near West Falls; presumably one regiment near Winfield. This is the same force that marched north through Hoods Mills at 2:00 PM. Something else is in front of the 4th Corps cavalry south of Westminster; its strength is unknown. Red cavalry which was early reported near Baltimore now seems to have moved north to Owings Mills and Reistertown. The strength of this force is not known. From his knowledge of the enemy's order of battle and information from prisoners, General A believes that a total of two regiments of corps cavalry and one brigade from a Red cavalry division are east of the Potomac. It seems that at least three of the Red regiments have been located. As a matter of fact, if the Blues had taken any prisoners or killed any cavalrymen during the day, the situation should be quite clear. The troops at Winfield, West Falls and Dawsonville could well be the two regiments of corps cavalry, while those south of Westminster and moving north through Owings Mills and Reistertown could well be the cavalry brigade of three regiments.

The infantry which has stopped General A's patrols on the line between Laytonsville and Old Germantown is certainly the outpost of the 1st Red Division, with a possibility of including part of that of the 4th Division.

It seems likely that the enemy's cavalry may have discovered the weak spot in the Blue screen along the Liberty Turnpike, between the 1st Cavalry Division and the cavalry in front of the 4th Corps. The Red cavalry may attempt to force this point on the 17th.

The Red infantry columns may, very likely, continue their northward march on the 17th.

One column seems to be definitely committed to the Rockville—Gaithersburg—Germantown road. Other lines of probable advance for main columns seem to be Gaithersburg—Urbana—Frederick, Gaithersburg—Damascus—Mt. Airy, and Olney—Cooksville—Winfield.

General A's information of the positions of the Red infantry, so far, is very scant. His attack will have some of the elements of a reconnaissance in force, whether the

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enemy be moving or whether he be struck while halted. If the enemy should be moving, on the 17th, the direction of the attack should be such that it will strike the flank of one of his main columns. The Blue cavalry should not fear to penetrate between two of the Red columns; its mobility must be relied upon to extricate it from a bad situation should one of the Red columns swing to the support of the other.

His Own Troops: His left brigade, the 3d, is more concentrated than his right brigade. This concentration is, however, the result of stronger collision with the Red cavalry. The Red cavalry is still in force on the front of the 3d Brigade and a strong junction must be made with the cavalry of the 4th Corps to prevent hostile reconnaissance from breaking through along the Liberty Turnpike.

His right brigade, the 1st, is more extended. Its front covers three of the enemy's main avenues of northward movement. The brigade, to act offensively against real opposition on the 17th, must be more concentrated.

His reserve brigade, the 2d, is now concentrated and is in position to be pushed through the 1st Brigade, in any chosen direction, to strike a strong blow toward Rockville. This would leave the present screen practically intact, but would have a great disadvantage in destroying the tactical unity of the 1st Brigade.

If the Blue cavalry advances in force along any of the main Red lines of advance before mentioned, it will simply run head-on into infantry in position, or it will, while fighting a meeting engagement on one road, find itself quickly turned out of position by the advance of hostile infantry on the roads on its flanks. The direction of advance should be such that it will cut across and seriously hinder the Red advance on two of these routes, or, if the enemy is found halted, the direction of the attack of the Blue cavalry should be such that it will roll up his outposts from one flank.

In the situation as far as now known, the general line of the Red outposts runs Dawsonville—Brink—Laytonsville. By striking his main blow at the bend in the Red line at Brink, General A can accomplish both of the above requirements. He stops the march and engages the Red

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columns on both the Washington—Frederick road and the Gaithersburg—Germantown—Dickerson road; or he takes in flank all of the enemy's outpost troops from Brink southwest to Dawsonville.

The time factor must receive serious consideration in this case. The cavalry division has just completed a long march with some fighting. To commence the necessary movements at daylight would have the advantage of giving the command the maximum of rest, of getting it off in good order, of insuring against loss of routes, and of permitting further and more detailed knowledge to be had of the Red dispositions in the chosen direction of advance.

To start before daylight, and to be in position to strike at daylight, on the other hand, means that the Reds are caught at the most inopportune moment, when they may be either relieving their outpost or just in the act of forming up for their march. It has also the advantage of allowing General A to make his preliminary movements under cover of darkness. The time for the transmission of orders will be short.

Terrain: The high ridge running south from Cedar Grove toward Brink gives good observation, and the advantage of observation continues with the Blues as the attack advances south. The 600-foot hills east of Boyds also offer good artillery observation. The network of roads is such that the cavalry can readily move in any direction. The country is shown to be full of patches of woods, large and small, which will greatly facilitate the forward assembly of the Blue cavalry and the covering of its large numbers of horses when the time for dismounted action comes.

General A's decision is therefore:

With the 3d Brigade to push forward sufficiently to secure Parrs Ridge throughout its length; to follow the enemy's cavalry vigorously in conjunction with the movements of the cavalry of the 4th Corps, until the Red cavalry is south of the south branch of the Patapsco.

With the 2d Brigade and one battalion, 1st Infantry, to attack the enemy's outposts east and west of Brink, striking in the direction Brink—Middlesbrook—Gaithersburg.

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With the 1st Brigade to block the Gaithersburg—Boyds road and to advance along the Dawsonville—Darnestown—Rockville road to interrupt traffic on the Baltimore & Ohio Railroad and the main road from Kensington and Washington.

The following order is issued, preceded by warning orders for the troops to be ready to move:

1st Cav Div,
URBANA,
16 Mch 20, 10:30 PM.

FIELD ORDERS
No 2

Maps: General Map Gettysburg-Antietam, 1"=10 miles.
Geological Survey, 1:62500, Rockville, Seneca, Ijamsville and Mt. Airy Quadrangles.

1. (a) Red cavalry moved north today toward MT. AIRY, WESTMINSTER, and REISTERTOWN. We drove one regiment east from LINGANORE through WOODVILLE. A Red squadron withdrew through HYATTSTOWN to DAWSONVILLE. The total Red cavalry force east of the POTOMAC is believed to be five regiments.

The 1st Red Div is north of ROCKVILLE, and the 2d and 3d Divs are along MIDDLE PATUXENT RIVER northwest of ANNAPOLIS JC. The 4th Div is believed to be north of KENSINGTON and two divisions are reported on the west bank of the POTOMAC near WASHINGTON.

Our patrols have encountered Red infantry outposts along the line: LAYTONVILLE—BRINK—GERMANTOWN—OLD GERMANTOWN.

(b) Our infantry reaches the line WOODSBORO—WESTMINSTER—PARKTON tomorrow.

The cavalry of the 4th Corps reached today the line of the W. M. R. R. from NEW WINDSOR through WESTMINSTER to EBBVALE. Tomorrow it advances to drive the Red cavalry in its front south of OWINGS MILLS.

2. This division, while continuing to screen the movement of our infantry, attacks tomorrow the Red infantry near ROCKVILLE to check its northward movement and to engage the attention of enemy's troops in rear.

3. (a) The 3d Cav Brig will push forward at daybreak to complete the occupation of PARRS RIDGE from the LIBERTY TURNPIKE to MT. AIRY. Acting in conjunction with the 4th Corps cavalry, it will drive the hostile cavalry south of the SOUTH BRANCH PATAPSCO RIVER and will hold the crossings of that stream. South of MT. AIRY it will hold the line DAMASCUS—LONG CORNER and continue its reconnaissance toward OLNEY.

It will reinforce its left to insure a junction with the 4th Corps cavalry and to prevent hostile cavalry from penetrating along the LIBERTY TURNPIKE.

It will maintain touch with the 2d Cav Brig on its right.

It will operate between the LIBERTY TURNPIKE (inclusive) and the DAMASCUS—BOOTJACK—LAYTONSVILLE—OLNEY road (inclusive).

(b) The 2d Cav Brig, starting at 3:30 AM tomorrow, will move to a position in readiness in the woods south of CEDAR GROVE, relieving the 2d Cav northeast of the CLARKSBURG—NEELSVILLE road.

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At 7:00 AM, reinforced by the 1st MG Sq, 3d Bn 1st Inf, and the 1st HA (less 3d Bn), it will deploy between NEELSVILLE and WILDCAT BRANCH and will attack the Red infantry east and west of BRINK, driving toward MIDDLEBROOK and GAITHERSBURG to paralyze movement on the GAITHERSBURG—OLD GERMANTOWN and GAITHERSBURG—CLARKSBURG roads.

(c) The 1st Cav Brig (less 2d Cav) will hold the line BURDETTE—BOYDS—DAWSONVILLE, stopping any hostile movement toward the northwest. It will maintain touch with the 2d Cav Brig on its left and will furnish protection for Btry A, 100th LA near BOYDS.

At daybreak it will push forward one regiment to drive back the Red squadron at DAWSONVILLE and to advance through DARNESTOWN toward ROCKVILLE, interrupting traffic near that point. When forced to retire, this regiment will withdraw through DAWSONVILLE.

(d) The 3d Bn 1st Inf will march tonight from DICKERSON to hill 623 (1 mile north of BURDETTE) to arrive at 5:00 AM tomorrow. It will then come under the orders of the CG, 2d Cav Brig.

(e) Artillery: The 3d Bn 1st HA remains attached to the 3d Cav Brig. The 1st HA (less 3d Bn) is attached to the 2d Cav Brig; Btry A 100th LA will move tonight to positions near BOYDS and will support the attack of the 2d Cav Brig by long range fire on the roads leading toward ROCKVILLE.

(f) Machine Guns: The 1st MG Sq is placed under the orders of the CG 2d Cav Brig.

(g) See Annex No 1, Air Service. Our army air service bombs the POTOMAC bridges.

(h) Reserves: The 2d Cav, after its relief by the 2d Cav Brig, will assemble under cover 1 mile north of CEDAR GROVE and will await further orders.

4. (a) See Adm O No 2.
(b) All field trains will be held north and west of PARRS RIDGE until further orders.

5. (a) Plan of Signal Communications: No change.
(b) Axes of Signal Communications:
3d Brig: FREDERICK TURNPIKE.
1st Cav Div and 2d Brig: URBANA—HYATTSTOWN—BRINK.
1st Brig: HYATTSTOWN—BLOCKTOWN—DAWSONVILLE.
(c) Command Posts:
1st Army: GETTYSBURG.
1st Cav Div: Advanced command post, CLARKSBURG after 5:00 AM, 17 Mch.
Brigade command posts will be advanced along their axes; new locations to be promptly reported.
1st Inf: Unchanged.

A,
Maj Gen.

Copies to:

1 CG
2 C of S
3-4 G1
5-6 G2
7-8 G3
9 Adj
10 Surg
11 Div Sig O
12 DMGO
13 CG 1st Cav Brig
14 CG 2d Cav Brig
15 CG 3d Cav Brig
16 CO 1st Inf
17 CO 3d Bn 1st Inf
18 CO 1st HA
19 CO 1st MG Sq
20 CO Btry A 100 LA
21 CG 1st Army
22 CG 1st Corps
23 CG 2d Corps
24 CG 3d Corps
25 CG 4th Corps
26 CO 4th Corps Cav
27 CO 1st Obsn Sq
28-34 War Diary and spare
35 Army AS Comdr

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The following message is sent:

1st Cav Div,
URBANA,
16 Mch 20, 11:30 PM.

SECRET AND CONFIDENTIAL;
NOT TO BE COMMUNICATED
TO SUBORDINATES EXCEPT IN
CASE OF EMERGENCY.

To CG 1st Cav Brig.
CG 2d Cav Brig
CG 3d Cav Brig
CO 1st Inf

Brigade commanders will carry in mind the possibility of withdrawal of the 1st and 2d Brigs tomorrow after their attack has accomplished its purpose. In case of this emergency, the 1st Brig will arrange to hold PARRS RIDGE from BEALSVILLE to CLARKSBURG (inclusive); the 2d Brig from CLARKSBURG (exclusive) to CLAGETTSVILLE (inclusive); the 3d Brig will hold from CLAGETTSVILLE through LONG CORNER to and along the north bank of the SOUTH BRANCH PATAPSCO RIVER. All brigades will continue active reconnaissance to the south. The enemy must be held south of the above mentioned line until our infantry arrives on the 18th March.

A,
Maj Gen.

AIR SERVICE

The following order is received:

1st Army AS,
GETTYSBURG,
16 Mch 20, 7:30 PM.

FIELD ORDERS }
No 10 }

Maps: Geological Survey, 1:62500.
Gettysburg—Rockville—Chambersburg area.
General Map, Gettysburg-Antietam, 1"=10 miles.

1. Hostile cavalry reported in vicinity of MT. AIRY, WESTMINSTER, OWINGS MILLS and REISTERTOWN. Hostile infantry reported as follows:

1st Div north of ROCKVILLE, 2d and 3d Divs along middle PATUXTENT RIVER northwest of ANNAPOLIS JC., one division, believed to be 4th, north of KENSINGTON. Two divisions reported between AQUEDUCT and CHAIN BRIDGES south of POTOMAC.

Hostile air service is composed of pursuit and observation. Numbers unknown. Red observation planes are active north of the COOKSVILLE—BALTIMORE road. The enemy's pursuit forces are on the defensive along the COOKSVILLE—ELLICOT CITY road and are not very active beyond that line. The enemy's air service south of the POTOMAC is still on the defensive.

Our infantry reaches the line WOODSBORO—WESTMINSTER—PARKTON tomorrow. 4th Corps cavalry drives enemy cavalry south of OWINGS MILLS tomorrow. The air service accompanying the march of the 1st Army remains on the defensive. The air service with the 1st Corps remains on the offensive.

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2. The 2d Purs Gp and the 4th and 5th Day Bomb Sqs will assist in the 1st Cav demonstration toward ROCKVILLE, 17 Mch 20 with a view to attracting the enemy's attention toward that front.
3. (a) The 2d Purs Gp will take the offensive tomorrow moving at daybreak and will operate scouring patrols to a depth of 10 miles in front of the 1st Cav Div. Close protection will not be afforded to the observation and bombardment airplanes. Arrangements will be made with the CG 1st Cav Div for this demonstration. Detailed information concerning the enemy air forces will be obtained from the 1st Obsn Sq at FREDERICK.
   (b) The 4th and 5th Day Bomb Sqs will attack and destroy the CHAIN BRIDGE, AQUEDUCT BRIDGE and LONG BRIDGE over the POTOMAC RIVER. They will concentrate on these bridges throughout the 17th March, and prevent the crossing of enemy troops and supplies. Close pursuit protection will not be available.
4. Rations and supplies will be drawn at the 1st Cav Div railhead at THURMONT.
   1st Air Dep at GREENCASTLE.
5. Communication will be maintained with these headquarters by way of 1st Cav Div Hq. 1st Cav Div CP at URBANA.

B,
1st Army AS Comdr.

Distribution:
CG 1st Army
C of S
G1, G2, G3, G4
1st, 2d, 3d and 4th Corps AS
1st Cav Div
2d Purs Gp
4th and 5th Day Bomb Sqs

DISCUSSION

The 2d Pursuit Group and the 4th and 5th Day Bombardment Squadrons have been assigned the mission of assisting the 1st Cavalry Division in its demonstration on the 17 March, 20. The mission of the cavalry is to attract the enemy's attention toward the division front, and to give the impression that the main body is close behind it.

The Enemy

On the 16 March, 20, the enemy was found to have the normal amount of observation squadrons and a few squadrons of pursuit. So far the exact numbers are unknown. His observation planes have been operating to the north of his forces, and his pursuit group has been on the defensive in that direction.

Having been observed by the airplanes of the 1st Observation Squadron, the Reds, in all probability, will send

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their observation machines over the 1st Cavalry Division area on the 17th, and attempt to reconnoiter thoroughly the terrain and roads in that vicinity. Also, in order to intercept the observation planes on the 17th, the Reds are likely to put out their pursuit patrols in that area and attempt to prevent the Blue observation planes from getting any more information.

The Red commander, upon seeing the amount of reconnaissance that the 1st Observation Squadron carried out on the 16 March, 20, will be very anxious about his left flank until he obtains thorough and definite information concerning it. So far the Reds have only encountered Blue air service on their left flank and that encountered was only observation, and, in consequence, the Reds might easily determine that it was the cavalry air squadron, and that it will be closely followed by the normal air service. In addition, the Reds have encountered in that vicinity the Blue cavalry that was preceding the 4th Corps, but no air service. They must therefore also cover that territory with their aerial reconnaissance. It can therefore be expected to see the Reds employ their air service more actively in the direction of the 1st Cavalry Division than in that of the corps cavalry.

In view of the fact that the Reds have been observed by a number of Blue airplanes, it is probable that the enemy will no longer keep his pursuit forces secret, but will send them out in full force on the 17th of March.

The Friendly Air Force

The Blue force remaining with the 1st Corps is still on the offensive for the purpose of creating the impression that the Blue commander is extremely anxious to know what the enemy is doing south of the Potomac. The air service with the main body of the army is being held down as much as is possible, in order not to disclose the army commander's plans; the pursuit group and bombardment squadrons that are to assist in the cavalry demonstration are, in so far as their aerial activity is concerned, unknown to the enemy.

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The army air service units that have been assigned to assist in the demonstration and create the impression that they are co-operating in a general attack, must normally be employed on the offensive in order to do so. By sending out scouring patrols well into enemy territory, the enemy can easily mistake the small pursuit force for a much larger one than it is, and in consequence may be led to believe that it is the army air service. These scouring patrols will also stand a fairly good chance of success against the enemy's pursuit forces, which will no doubt oppose them.

If the pursuit forces are used on the defensive, the enemy can easily penetrate the barrage, because it will necessarily be very thin on account of the length of front and small number of pursuit effectives available. However the Reds can easily inflict heavy losses on the Blue pursuit group by concentrating their pursuit forces against our small defensive patrols; also a defensive barrage is not usually taken as an indication of a determined attack. It generally indicates a future attack, a weak air force, or an inactive sector, all of which are undesirable impressions in this particular situation.

In view of the fact that this pursuit group will be needed by the 1st Army in the attack, it is undesirable to lose many machines; furthermore, as it is only necessary for the group to divert the enemy's attention for one day, it would seem that by employing scouting patrols its mission would be well accomplished, and that it would suffer fewer losses than if employed in any other manner.

The method in which pursuit patrols of five or six machines are assigned to the various altitude zones and over a sector in advance of the front line makes it quite impossible with such a long front and with the number of pursuit forces available to cover the front.

In this situation, as far as the bombardment forces are concerned, the enemy can be more effectively delayed and hindered in his plans by bombing the bridges over the Potomac than in any other way. They would be the logical targets to be bombed if the Blue army was actually launching an offensive. In addition, if these bridges are success-

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fully destroyed, it will aid the Blue army materially when it does commence its action. By bombing them, the bombardment squadrons will be operating normally, and thus assist considerably in deceiving the enemy.

Troops, convoys, and railroad yards could be bombed, but the results would not be as remunerative as those derived from bombing the bridges. Also the effects of bombing troops and convoys is almost completely measured in terms of morale, and to be of value the bombing must be done continuously. Furthermore, the damage done to railroad yards can be readily repaired unless they are repeatedly bombed, whereas the effects of destroying bridges, when the Potomac is in flood, might be disastrous to the enemy, for such bridges are not easily repaired or replaced.

In view of the above, it would seem desirable to concentrate the efforts of the two bombardment squadrons on the bridges over the Potomac.

The decision is made to employ the pursuit group and the bombardment squadrons, as set forth in the following orders:

ANNEX No 1 to FIELD ORDERS No 1, 1st CAV DIV

AIR SERVICE

1st Obsn Sq,
FREDERICK, MD.,
16 Mch 20, 11:00 PM.

FIELD ORDERS
No 2

Maps: Geological Survey, 1:62500.
Gettysburg—Rockville—Chambersburg Area.
General Map, Gettysburg-Antietam, 1"=10 miles.

1. Enemy's air service is composed of pursuit and observation. Red observation planes appear to be in normal numbers, pursuit is believed to be six squadrons. Red observation planes are active north of the COOKSVILLE—BALTIMORE road, and pursuit planes have been on the defensive along that line. Enemy's air service south of the POTOMAC is still on the defensive. The friendly air force accompanying the march of the 1st Army remains on the defensive, and that with the 1st Corps remains on the offensive. The 2d Purs Gp and the 4th and 5th Day Bomb Sqs take the offensive tomorrow and assist in the 1st Cav Div demonstration.
2. The 1st Obsn Sq will assist the 1st Cav Div in its demonstration on 17 Mch 20, by battle observation and distant reconnaissance.
3. One airplane will be constantly on duty on battle reconnaissance throughout the hours of daylight. It will cover the division sector and to a depth of 4 miles in advance of the division front.

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Two planes will be held in reserve and on the alert. One plane will be reserved for courier duty, and one plane will be held as command plane. Two formations of three planes will perform the long distance reconnaissance missions. These missions will be carried out in the forenoon and afternoon—messages will be dropped at brigade and division command posts. See Appendix No 1, Employment of 1st Obsn Sq.

4. Supplies: No change.

5. For plan of Signal Communications: See Annex No— (omitted).
Dropping Grounds and Command Posts:
1st Cav Div: CLARKSBURG.
1st Cav Brig: BOYDS.
2d Cav Brig: HYATTSTOWN.
3d Cav Brig: MT. AIRY.
1st Army: GETTYSBURG.

A,
Major AS.

Official:
ABC
Adjutant.

Distribution:
Same as Div FO

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APPENDIX No 1 to ANNEX No 1 to FIELD ORDERS No 2, 1st CAV DIV

EMPLOYMENT OF OBSERVATION AVIATION

16 March 20, 11:00 PM.

Number of Airplanes	*Time of Departure*	*Mission*	*Remarks*
One	7:00 AM	Battle reconnaissances	Division sector and front
One	8:00 AM	Location of lines	Division front
One	9:00 AM	Battle reconnaissance	Division sector and front
Three	9:00 AM	Battle reconnaissances	Along line DAMASCUS—UNITY—ANNAPOLIS JC. thence to LAUREL—ROCKVILLE—KENSINGTON—WASHINGTON and LEESBURG.
Three	9:10 AM	Visual reconnaissance	From TAYLORSVILLE to NORTH BRANCH to OWINGS MILLS, to BALTIMORE, ELLICOTT CITY, ANNAPOLIS JC., along MIDDLE PATUXENT RIVER to COOKSVILLE, thence to MT. AIRY.
One	9:30 AM	Battle reconnaissance	Division sector and front
One	10:00 AM	Battle reconnaissance	Division sector and front
One	12:00 noon	Battle reconnaissance	Division sector and front
Three	2:10 PM	Visual reconnaissance	From LEESBURG to WASHINGTON, ANNAPOLIS JC., LAUREL, thence west along the ROCKVILLE ROAD to junction of BALTIMORE—ELLICOTT CITY—WASHINGTON road, thence south along that road to the B. & O. R. R., thence NW along WASHINGTON—COOKSVILLE road to the junction of the ROCKVILLE—LAUREL road, thence to ROCKVILLE and DAMASCUS.
Three	2:20 PM	Visual reconnaissance	DAMASCUS to UNITY, ANNAPOLIS JC., BALTIMORE, ELLICOTT CITY, thence between the MIDDLE PATUXENT RIVER and the COOKSVILLE road to COOKSVILLE and to MT. AIRY.
One	2:00 PM	Battle reconnaissance	Division sector and front

A,
Major AS.

Distribution:
Same as Annex.

DISCUSSION

The mission of the 1st Observation Squadron on 17 March is the combined mission on a small scale of an infantry division squadron and of an army observation squad-

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ron. In other words, it must keep the command informed on the progress of the attack, and also carry on some long distance reconnaissance in order to keep the movements of the Red main body under observation.

The Enemy

What was said about enemy's forces in the discussion of the pursuit and bombardment forces applies equally in this phase of the problem. Also due to the fact that the 1st Observation Squadron has been in direct contact with the Red aircraft it has been able to make fairly accurate deductions regarding the number of air units with the enemy.

Friendly Forces

The 1st Observation Squadron during the operations of the preceding days lost one plane in enemy territory and had one badly shot by machine gun fire. Consequently, there are 16 machines available for the next day's demonstration.

The squadron is still located at the Frederick airdrome and is in good communication with division headquarters; plans are under way to get communication with the army air units which are at Woodsboro.

The division commander will no doubt desire one airplane to observe, as much as is possible, the progress of the attack and one machine to locate the lines at various times; in addition, he will want information concerning the movements of the Red forces. The situation might also require the use of one machine as a courier plane.

If the demands are not too heavy on the 1st Observation Squadron, one command plane could be used to advantage for obtaining the location of the lines and command posts. The above mentioned missions will require the services of eight machines, and if we place two more machines in reserve and on the alert, 10 of the 16 machines will be employed. This leaves six machines for long distance reconnaissance work.

Due to the fact that the pursuit machines will be unable to furnish protection of any importance to the long distance reconnaissance planes, and that the enemy will, in all probability, actively oppose the Blue air force on the 17th of

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March, it is advisable to send these planes out in formation, and assign to them missions that cover considerable territory. This arrangement will diminish the number of missions for long distance reconnaissance but will not be so productive of detailed results; on the other hand it will save machines and will be more likely to assure a certain amount of desirable information. In this situation, the primary object is not to save machines, but to obtain information and return with it. By using formations it is possible to do both, thus making this method the more desirable. Also by sending each formation on two missions it will appear as though the army observation units are in operation, thus assisting more toward the common end. This can be accomplished by dividing the remaining six airplanes into two formations of three machines each. Each formation can be sent out once in the morning and once in the afternoon. Ordinarily a pilot and observer would not be called upon to make two such flights in a day, but in view of the fact that the work of the 1st Observation Squadron has been of short duration, and will not continue under such a high pressure more than one more day, it seems advisable and proper to call upon them for the additional work.

The long distance reconnaissance planes could be sent out individually, but the chances that very many would return are not great. Three single machines could be despatched in the morning and three in the afternoon, over comparatively small sectors, or all six could be used in the same way. But if the enemy does send out pursuit patrols to intercept these machines, it would be an easy matter for the hostile pursuit to dispose of them, and certain important sectors would not be reconnoitered at all.

The fact that one group of pursuit machines will be operating in front of the 1st Cavalry Division will assist materially the planes that will be used for observing the battle, getting the position of the lines, etc. They, no doubt, will be hindered somewhat in their operations, but, with the Red pursuit forces which are probably available, there is no reason to believe that they cannot perform their missions satisfactorily.

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The courier plane will probably be used a great deal in communicating with army headquarters. It might also serve as a means of communication between division headquarters and brigade headquarters.

What was said in the preceding discussion concerning the arrangements with brigade command posts regarding panels applies in this situation as well. In addition to the command post identification panels, the marking panels will be displayed upon call from airplanes. Care should be taken that the troops thoroughly understand that when an airplane fires a certain signal, they must display their panels.

After careful consideration of the foregoing the decision is made to employ the 1st Observation Squadron as set forth in the attached orders.

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(C) CAVALRY SCREENING—MAP PROBLEM

COLONEL HERBERT J. BREES,
Cavalry

Maps: General Map, Gettysburg-Antietam, 1″=10 miles.
Geological Survey, 1:62500, Fairfield, Gettysburg, Emmitsburg, Taneytown, Westminster, Ijamsville, Mt. Airy and Ellicott Quadrangles.

General Situation:

Red (western) and Blue (eastern) states are at war.

The Reds are mobilizing in the valley west of the Catoctin and South Mountains. Only a few detachments of cavalry are east of the mountains.

The Blues have seized Washington, Annapolis, Baltimore and Havre de Grace and are debarking troops at each of those places.

Special Situation (Blue):

(See General Map)

The Blue forces consist of the 1st Army (3 corps) debarking at Washington; the 2d Army (4 corps) debarking at Annapolis and Baltimore; the 3d Army (3 corps) debarking at Havre de Grace.

On April 1st the Commanding General, 2d Army, reports his debarkation as practically complete, and that he will be ready to advance on April 5th.

On April 2d, the Commanding General, 2d Army, whose headquarters are at Baltimore, receives the following instructions from the Commander-in-Chief:

> "Reliable reports show the Red mobilization nearly completed. Indications point to his early advance east of the mountains. I propose to hold him west of the mountains by seizing the eastern exits of the passes across the mountains.
>
> "The cavalry of the 1st Army will advance on FREDERICK on April 6th * * *
>
> "The cavalry of the 3d Army will advance on CARLISLE on April 7th * * *
>
> "The 2d Army will advance on April 5th to seize the passes from THURMONT to ARENDTSVILLE (both inclusive) and prevent egress of the enemy therefrom.
>
> "*Zone of Action*:
>
> "North boundary: BALTIMORE (inclusive)—EBBVALE (exclusive)—LITTLESTOWN — GETTYSBURG — ARENDTSVILLE (all inclusive).

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"South boundary: ELLICOTT CITY (inclusive)—COOKSVILLE (exclusive)—LIBERTYTOWN — WOODSBORO — THURMONT (all inclusive)."

* * * * * * *

Based on the foregoing instructions the Commanding General, 2d Army, issues the following order:

(NOTE:—Prior to its issuance a conference was held with corps, cavalry division, artillery and air service commanders.)

2d Army,
BALTIMORE, MD.,
3 April 20, 10:00 AM.

FIELD ORDERS }
No 1 }

Maps: General Map, Gettysburg-Antietam, 1"=10 miles.
1:62500, Fairfield, Gettysburg, Emmitsburg, Taneytown, Westminster, Ijamsville Mt. Airy and Ellicott Sheets.

1. The Red mobilization is practically complete. An advance to the east of the CATOCTIN and SOUTH MOUNTAINS is expected soon. Only a few Red cavalry detachments are east of these mountains at present.

   Our armies will advance to the northwest. The cavalry of the 1st Army advances on FREDERICK on 6 April 20; the cavalry of the 3d Army on CARLISLE on 7 April 20.

2. This army will advance toward the line THURMONT—ARENDTSVILLE on 5 April 20 (see organization and march table attached) (omitted).

   Zone of Action:

   North boundary: BALTIMORE (inclusive)—EBBVALE (exclusive)—LITTLESTOWN—GETTYSBURG — ARENDTSVILLE (all inclusive).

   South boundary: ELLICOTT CITY (inclusive)—COOKSVILLE (exclusive) — LIBERTYTOWN — WOODSBORO—THURMONT (all inclusive).

3. (a) The 2d Cav Div will advance early 5 April 20, toward the line THURMONT—ARENDTSVILLE, screening the advance of the army. It will seize the passes across the mountains between those two places (both inclusive) by the evening of 6 April 20, and prevent egress of the enemy to the east of the mountains. Early information is desired concerning hostile movements to the east. Officers' patrols will be sent at once toward BOONESBORO, HAGERSTOWN, WAYNESBORO, CHAMBERSBURG, SHIPPENSBURG and CARLISLE. Contact will be maintained with the cavalry of the 1st Army.

   Zone of Action: Same as 2d Army.

   (b) The army air service will start its reconnaissance this date. It will determine without delay any hostile movements across the CATOCTIN and SOUTH MOUNTAINS. Special day and night reconnaissances will be made until further orders of all roads and railroads leading to the east and southeast between SHIPPENSBURG and HAGERSTOWN. Dropping fields will be so arranged as to secure close co-operation with the 2d Cav Div.

   (c) The 4th Corps will advance as per march table attached. (Omitted.) * * *

   (d) The 5th Corps will advance as per march table attached. (Omitted.) * * *

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(e) The 6th Corps will advance as per march table attached. (Omitted.) * * *
(f) The 7th Corps will advance as per march table attached. (Omitted.) * * *
(g) For Army troops see march table and movement orders.

4. See Adm O No 3 (omitted).

5. (a) Plan of Signal Communications. See Annex No 1 (omitted).
(b) Axes of Signal Communications.
Army: BALTIMORE—REISTERTOWN—WESTMINSTER—TANEYTOWN.
4th Corps: * * *
5th Corps: * * *
6th Corps: * * *
7th Corps: * * *
(c) Command Posts.
See march table.

By command of Lt Gen A:

XYZ,
C of S.

Copies to:
* * *

At the time of receipt of above order, the 2d Cavalry Division is disposed as follows: (See 1:62500 map.)

The 4th Cavalry Brigade in the vicinity of Reistertown; the 5th Cavalry Brigade in the vicinity of Glyndon; the 6th Cavalry Brigade in the vicinity of Woodensburg; 102d Observation Squadron in Worthington Valley; the 2d Horse Artillery at St. George; the 102d Field Signal Battalion and 102d Battalion Engineers (mounted) near Gwynnbrook; the 5th Machine Gun Squadron (motorized) at Garrison; division trains near Garrison; Field Hospital No. 1 is set up at Glyndon; division command post at Owings Mills. Field trains are with their respective brigades.

Up to the present time no Red aircraft has been seen east of the mountains. The weather is overcast and air observation is poor.

Required:

Formal written field orders for the advance of the 2d Cavalry Division. (Administrative orders and annexes not required, but paragraph 4 will give sufficient detail to show the general scheme as to handling and movement of trains.)

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An Approved Solution

2d Cav Div,
OWINGS MILLS, MD.,
3 April 20, 6:00 PM.

FIELD ORDERS
No 5

Maps: General Map, Gettysburg-Antietam, 1"=10 miles.
1:62500, Ellicott, Westminster, Mt. Airy, Taneytown, Gettysburg, Ijamsville, Emmitsburg and Fairfield Quadrangles.

1. The Red mobilization west of the CATOCTIN and SOUTH MOUNTAINS is practically complete. Reliable reports indicate a Red advance soon. Only a few hostile cavalry detachments are east of the mountains.

   Our armies will advance to the northwest. The cavalry of the 1st Army moves on FREDERICK on 6 April 20; the cavalry of the 3d Army on CARLISLE on 7 April 20.

   Our 2d Army moves toward the line THURMONT—ARENDTSVILLE on 5 April 20.

2. This division will advance on the line THURMONT—ARENDTSVILLE on 5 April 20, screening the advance of the army. The passes across the mountains between those places, both inclusive, will be secured by the evening of 6 April 20. Any advance of the enemy east of the mountains will be prevented.

   Zone of Action:

   North boundary: ALBANTOWN—MELROSE—SELLS STATION—GRANITE HILL—ARENDTSVILLE (all inclusive).

   South boundary: ELLICOTT CITY—HOODS MILLS—LINGANORE—THURMONT (all inclusive).

3. (a) The 6th Cav Brig, with one bn HA and 1 co engrs attached, will cover the advance of the army in the brigade zone of action. Its advance guard will cross the CARROLL COUNTY—BALTIMORE COUNTY boundary line at 6:00 AM. It will watch especially the right flank until contact is established with the 3d Army. It will send officers' patrols at once toward CARLISLE, SHIPPENSBURG, and CHAMBERSBURG. Early information is desired concerning any hostile movements.

   Zone of Action:

   North boundary: North boundary of division.

   South boundary: WOODENSBURG—WESTMINSTER—TANEYTOWN—McKEE KNOB (all inclusive).

   (b) The 4th Cav Brig, with 1 bn HA and 1 co engrs attached, will cover the front of the army in the brigade zone of action. Its advance guards will cross the line of the NORTH BRANCH PATAPSCO RIVER at 6:00 AM. It will maintain contact with the cavalry of the 1st Army. It will send at once officers' patrols toward WAYNESBORO, HAGERSTOWN and BOONESBORO. Early information is desired as to any hostile movements.

   Zone of Action:

   North boundary: South boundary 6th Cav Brig.

   South boundary: South boundary of division.

   (c) The 5th Cav Brig, 2d HA (less 2 bns), 5th MG Sq, 102d Bn Engrs, mounted (less 2 cos) and 102d F Sig Bn (less dets) will constitute the division reserve. This command will advance on the REISTERTOWN—WESTMINSTER — TANEYTOWN road, its advance guard crossing the NORTH BRANCH PATAPSCO RIVER at 10:00 AM.

   (f) The 102d Obsn Sq will start its reconnaissance at daybreak 4 April 20, devoting special attention to the passes across CATOCTIN and SOUTH MOUNTAINS within the division zone of

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action. Special reconnaissance will be made toward CARLISLE. It will report daily at 9:00 AM, 1:00 PM, and 5:00 PM as to the progress of the advance. It will reconnoiter for, and be prepared to establish, landing field near TANEYTOWN on 5 April 20. The squadron commander will make the necessary arrangements with the commanding generals, 4th and 6th Cav Brigs, to insure direct communication with those brigades while enroute.

(x) 1. Preliminary movements of troops to reach starting places will be made on 4 April 20.

2. Leading brigades will maintain close and constant contact with each other.

4. Field and combat trains will accompany their respective organizations. One-half amb co (mtz) will accompany the 6th Brig; one-half amb co (mtz) the 4th Brig; 1 amb co (anl) the reserve. Evacuation to F Hosp No 1 at GLYNDON.

Div Tns (less 2 amb cos and F Hosp No 1) will move to WESTMINSTER starting at 4:00 PM, 5 April 20.

For other details see Adm O No 5 (omitted).

5. (a) Plan of Signal Communications: See Annex No 1 (omitted).

(b) Axes of Signal Communications:

Div: OWINGS MILLS—REISTERTOWN—WESTMINSTER—TANEYTOWN.

6th Cav Brig: WOODENSBURG—WESTMINSTER—UNION MILLS—LITTLESTOWN—GETTYSBURG.

4th Cav Brig: REISTERTOWN—GAMBER—NEW WINDSOR—UNION BRIDGE—KEYMAR.

(c) Command Posts:

Div: Will close at OWINGS MILLS at 12:00 noon, 5 April 20, and open at WESTMINSTER same date and hour.

Brigs: Enroute. Prompt report will be made of locations selected for night of 5-6 April 20.

B,
Maj Gen.

Copies to:

Div Staff
4th Cav Brig
5th Cav Brig
6th Cav Brig
2d HA
5th MG Sq
102d F Sig Bn
102d Obsn Sq
102d Engr Bn
CO Tns
2d Army
4th Corps
5th Corps
6th Corps
7th Corps

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(D) AN OFFENSIVE RESERVE

General Discussion

COLONEL HERBERT J. BREES,
Cavalry

Maps: General Map, Gettysburg-Antietam, 1″=10 miles.
Geological Survey, 1:62500, Seneca, Rockville, Laurel, Ellicott, Taneytown, Ijamsville Quadrangles.

General Situation:

Virginia (Blue) and Maryland (Red) are at war.

The Red mobilization was effected west of the Catoctin and South Mountains, only a few militia detachments being east thereof.

The Blue mobilization was effected south of Washington.

Each side has troops along the Potomac from the mouth of the Monocacy westward.

A Blue Army crossed at Washington and invaded Maryland, advancing to the northwest toward Frederick. A second Blue army is being debarked at Baltimore.

The Blue threat drew the greater part of the Red forces east of the mountains. These forces have been engaged for about ten days.

Special Situation (Blue):

The 1st Blue Army, which crossed at Washington, consists of the 1st, 2d and 3d Corps, the 1st Cavalry Division, three brigades of heavy artillery, air service and other necessary auxiliary troops and trains.

Its advance was rather rapid at first but was soon stubbornly opposed by the Reds. For the past week it has fought its way forward slowly. Both sides have suffered heavy losses.

On March 7th, the Blue army penetrated the Red center and formed a salient northeast of Sugar Loaf Mountain. On the 8th, Red counter-attacks stopped its advance. These counter-attacks were repulsed only with difficulty.

The 1st Corps is on the left, the 2d in the center and the 3d on the right. Divisions have suffered heavy losses and practically all the reserves have been utilized.

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The 1st Cavalry Division, which had been covering the right, was drawn back to the vicinity of Cooksville and West Friendship on the 6th. Its losses in men and horses have been replaced from the corps cavalry.

At noon, the 8th, the army commander received the following message from general headquarters:

> "Our air service reports a hostile force of all arms crossing at the ARENDTSVILLE and CASHTOWN passes and moving south. It should reach your front early the 10th. Our 2d Army has finished its debarkation and starts its advance on the 9th on TANEYTOWN and GETTYSBURG.
>
> "The BALTIMORE & OHIO RAILROAD running from ELLICOTT CITY to FREDERICK is needed as a line of supply. You must exert every effort and force the enemy north of LINGANORE CREEK and west of the MONOCACY before the arrival of his reinforcements on the 10th."

At noon, March 8th, the two forces were opposing each other closely on the general line, mouth of the Monocacy—south, east and northeast slopes of Sugar Loaf Mountain—Bennett Creek—Centerville—Ijamsville—Monrovia—north of Kempton—Parrs Spring—Mt. Airy—Gosnell.

Air reports at the same hour show a concentration west of Urbana and a weakening of the enemy's left, apparently only one brigade being in reserve near West Falls. Red cavalry which has been covering the enemy's left was drawn back on the 7th.

The army commander decides to renew the attack early on the 9th, driving hard between Monrovia and Plane No. 4, combined with a vigorous effort by the 3d Corps on the right, and to move the 1st Cavalry Division during the night and have it attack the enemy reserves the next morning in the direction of West Falls and Woodville.

The cavalry division commander was summoned to a conference at army headquarters at Rockville at 2:00 PM. The corps commanders were present at this conference and the plan of the army commander was outlined. Before leaving, the cavalry division commander was given the army field orders from which the following extracts are taken:

> 2. The army will renew its attack tomorrow, 9 March 20, driving the enemy north of LINGANORE CREEK and west of the MONOCACY RIVER.
>
> Time of attack: 7:00 AM.
>
> 3. (b) The 2d Corps * * * will drive hard on its right, making its main effort between MONROVIA and PLANE No. 4. * * *

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(c) The 3d Corps * * * will assist the 2d Corps by quickly clearing the heights north of BUSH CREEK. It will press hard on its right and secure PARRS RIDGE, advancing to TALBOT BRANCH. * * * *

(d) The 1st Cav Div will move tonight around the enemy's left. It will attack the enemy's reserves at 7:00 AM, 9 March 20, driving hard in the direction WEST FALLS—WOODVILLE. As soon as the advance of the 3d Corps is assured the 1st Cav Div will be concentrated north of TALBOT BRANCH prepared to oppose the advance of the Red reinforcements approaching from the north. It will early gain and maintain contact with this hostile force.

At this time, the 1st Cavalry Division is disposed as follows:

The 1st Cavalry Brigade is along the stream running southeast of Cooksville with its command post at Cooksville; the 2d Cavalry Brigade is along the streams running through Rover and Tollgate with its command post at Tollgate; the 3d Cavalry Brigade is along the Terrapin Branch and Middle Patuxent, south of West Friendship, with its command post at West Friendship; the 1st Horse Artillery is at Clarkson; the 1st Machine Gun Squadron at Mountview; the 1st Field Signal Battalion at West Friendship; the 1st Battalion Engineers at Rover; the 1st Observation Squadron at Glenwood, and trains at St. Charles College and Doughoregan Manor.

Required:

The written field orders of the cavalry division commander.

ESTIMATE OF THE SITUATION

Mission

The orders received by the division commander indicate two missions, first, an attack on the 9th preceded by a night march; second, following the attack, an assembly and a change of direction in order to offer a front to the menace of the Red forces approaching from the north. Both missions therefore demand that the division be kept concentrated and well in hand. Both present many difficulties, not the least of which is the night march.

The issuance of a combined march and attack order would be very advantageous, especially in view of the difficulties that will be encountered in the issuance and transmission of an attack order during the night, sufficiently early to reach all troops before the hour set for the attack. However, sufficient definite information of the enemy is not yet available to warrant an attack order at this time. Such

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an order would violate the cardinal principle not to issue orders covering events too far in the future. There is more than a strong probability that opposition will be encountered during the night.

Aside from the reserve brigade reported at West Falls, nothing is known at the present time as to the location of other hostile reserves. All that can be done now is to issue a march order putting the division on the march in such a formation as will enable it to meet any contingency that may arise during the night. The brigade commanders must be informed that the march is being made with a view of attacking early the next morning. They must be prepared for this, as well as for handling of any situation that might come up during the night.

In the meantime all additional information possible regarding the location of enemy reserves must be obtained during the afternoon and night. The air service should be utilized during the afternoon for this purpose, and all information in the possession of the 2d Corps, 3d Corps and army must be obtained. Patrols could be sent out, not only to reconnoiter routes of advance, but also to obtain information as to the location of hostile outposts, patrols and covering detachments.

With a cavalry division in a situation of this kind it is not probable that there will ever be any great amount of time available for the issuance of attack orders much in advance of the time for the attack. In this situation the mobility of the cavalry division and surprise seem to be the principal essentials.

It will take the division commander the better part of an hour to return from army headquarters to his own command post. This will give him time to form a fairly definite conclusion as to the manner in which he will handle his problem. To save time he should send a message to his own command post before leaving army headquarters, directing that a warning order be issued and that brigade commanders be assembled and instructed to join him upon his arrival.

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The Enemy

The line upon which the enemy is resisting is well established. But little is known as to the location of his reserves and cavalry. The only definite information available at the present time is that there has been an apparent weakening of his left, a reported concentration west of Urbana, which has the appearance of a formation for a counter-attack, a fairly definite location of one reserve brigade, and the fact that a force is advancing from the north. Although his cavalry has been withdrawn from the left flank, there is no doubt that that flank is well covered with patrols, outposts and covering detachments. The probability of encountering such elements during the night must be borne in mind.

While the advance of the hostile reinforcements from the north must not be forgotten, they are still too far away to have any influence over the situation on the 9th, except for the fact that being comparatively near at hand they may have the tendency to stiffen materially the resistance of the Reds. There is no doubt but that the enemy has suffered as heavily as we have, but the fact that we have been able to make progress indicates a superiority in numbers, or morale, and probably both. The direction of approach of the Red reinforcements is not yet definitely known. Whether they are moving due south or to the southeast must be ascertained as soon as possible. While this will be one of the functions of the army air service, at the same time the cavalry division commander must take steps to receive early information and warning as to the direction and location of this Red force.

Our Forces

In the carrying out of his mission the division commander can expect no help. The Blue army will have its hands full in carrying out the plan prescribed by the army commander. This plan indicates a widening of the salient that has been formed, which, combined with the pressure of the 3d Corps and the attack of the cavalry division, should, if successful, cause a rapid withdrawal of the enemy's left to the west or northwest. To be successful the attack must

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be co-ordinated and vigorously carried out and, as far as the cavalry division is concerned, contain the element of surprise. Furthermore, the plan must be completely carried out before the arrival of the Red reinforcements. No help can be expected from the 2d Army before the evening of the 10th, although the cavalry of the 2d Army should appear on the scene by the evening of the 9th. The distance from Baltimore to Parrs Ridge is about 25 miles. This could be made by the cavalry in one day, but no considerable infantry pressure could be brought to bear before the 11th. By this time the Red reinforcements will have appeared on the scene.

Terrain

The country over which the division must operate is rough, hilly, difficult, and apparently well wooded. Although movement off the road will be possible in the daytime, it will readily appear that any movement at night will be restricted almost entirely to roads. Parrs Ridge, which is an important terrain feature, is controlled by the enemy's left. This ridge is about 3 miles in advance of our present right. This, in addition to the location of the hostile reserve already known, indicates that the attack of the cavalry division must be made on that ridge or west of it.

There is no question, either, but that the attack will have to be made dismounted. However, the many ravines and woods afford the advantage of permitting the horses to be brought up close. This will facilitate maneuvering and rapiditiy of movement. It is believed that it will not be necessary to drive the attack to the limit, but that the desired result can be obtained by maneuvering and threats, unless the enemy has reserves close at hand which will nullify such threats. In the latter case these reserves must be held and prevented from reinforcing other portions of the line.

From the present location of the cavalry division a number of good roads lead to the north and west, namely, the Sam's Creek Road, the Washington Road, the road through Gaither, the Sykesville Road, and the Tunnel Road. Of these roads the Sam's Creek Road can be eliminated at once as it is too close to the front line; the Tunnel Road seems

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to be a little longer and more roundabout than absolutely necessary; the other three roads seem to offer all the advantages necessary. The Washington Road, which is the nearest to the front, is still sufficiently far away to prevent any movement along that road being seen at night, and also far enough away so that the noises incident to the march will not be readily heard by the enemy. South of Barrett a road leads to the west, but it has the disadvantage of being too close to the enemy's position. The road leading westward from Barrett is better. The road leading through Gaither strikes the Washington Road at Barrett, and also strikes the Liberty Turnpike at road junction 629, crossroads 713 and Winfield. Any column advancing on this road must be so regulated as not to cross or interfere with columns advancing on the other roads.

As far as is known the attack of the division will have to be made in the vicinity of West Falls. It will be seen at once that the Buffalo Road and the Parrs Ridge Road lend themselves admirably as guiding lines for movement during the dark. The distance from Cooksville to the Ridge Road by the Washington Road is approximately 12 miles, by the next two roads eastward a little over 15 miles, and by the Tunnel Road something over 18 miles.

Plan of Action

An advance in one column is out of the question. The length of the column, the time it will take, and the difficulties in getting into attacking positions are such that such a formation for advance can be eliminated at once. A formation must be adopted that will allow the movement to be made rapidly, that will permit the quick brushing aside of any opposition encountered, and that will facilitate the taking up of an attack formation in the darkness. An advance by two columns seems to be a satisfactory formation, with the exception that many of the objections noted above would apply to the longer column. An advance by three columns would fulfill all requirements. Furthermore, the roads are so located with reference to the present camp sites that the brigades can be placed at once on these roads without any preliminary movement or crossing of columns.

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The only movement that will be necessary before darkness will be the shifting of a portion of the artillery if it is decided to divide the regiment between two or more of the columns. However, a simultaneous advance of the three brigades will result in interference at Barrett and at Liberty Turnpike, unless the country road running westward from road junction 529 to Buckhorn Run is used. Any possibility of interference can be eliminated by echeloning the brigade moving on the center road, or by echeloning the right column. The former method seems the more satisfactory one, as the other columns are close enough to afford mutual support. Three columns advancing together westward of Barrett would be restricted for maneuvering space in case the enemy was encountered anywhere in that vicinity. The echeloning of the middle brigade, and using it as a reserve, gives a very flexible formation that will allow a division to be swung or maneuvered in any direction. Assuming that it is decided to move in two columns, artillery will be desirable with each of these columns. The left column will partake more or less of the nature of a flank guard. Consequently it would seem that less artillery would be necessary with this column than with the right column.

Decision

The division commander decides:

(1) To move his division in three columns. His 1st and 3d Brigades to move on the Washington Road and Sykesville Road respectively, starting at dark. The 2d Brigade to be used as reserve and moved on the Gaither Road, the head starting shortly after the tails of the two other columns have started.

(2) To attach the 1st Horse Artillery (less one battalion) to the 3d Brigade and one battalion to the 1st Brigade. To move provisionally to the vicinity of Taylorsville prepared to attack to the southwest toward West Falls, provided opposition is not encountered, or additional or more definite information is not received before the time of starting.

DISCUSSION

The length of the 1st Brigade, including distances, but excluding field and combat trains, will be about 5½ miles; that of the 3d Brigade about 6½ miles. It is hardly probable that a night movement of forces of this size will exceed 3½ miles per hour. Sunset at this time of the year is 5:55

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PM. However, it will probably not be dark much before 7:00 o'clock. Therefore, 7:00 o'clock can be assumed as about the earliest hour at which the start can be made. This should put both the 1st and 3d Brigades concentrated in the vicinity of Taylorsville before 2:00 AM, provided no opposition is encountered on the move. This early hour may take away some of the element of surprise, but it is believed that a fairly early start should be made to allow sufficient leeway to overcome any resistance that may be encountered during the night and to get the troops into position sufficiently early so that the attack can be delivered at the hour designated by the army commander. It is a well known fact, too, that movements at night are always slower than is generally figured, and there is always a possibility that troops may go astray.

An attack order will be necessary some time during the night, and this is another reason why it is considered advisable to utilize every moment of darkness in making this move. By starting at 7:00 PM the tails of the 1st and 3d Brigades will clear the Frederick Turnpike by 9:00 PM. Under the plan of action decided upon, this is considered the earliest at which the 2d (or reserve) Brigade should start. This formation gives to each brigade a well defined road, which should reduce to the minimum the chance of any element going astray. No two columns cross or interfere with each other, which further simplifies the proposition. The plan adopted of moving the 1st Brigade by the Washington Road to the Parrs Ridge Road and the 3d Brigade by the Liberty turnpike—Buffalo road gives a formation suitable for launching an attack to the west, south or southwest, or to the north, if necessary, and to take care of any contingency that may come up.

As stated before, an attack east of Parrs Ridge will have little effect and is open to the further disadvantage that it would expose the division to our own artillery fire. In this connection the division commander will have to make arrangements with the commanding general, 3d Corps, so that artillery fire of that corps does not fall west of the Parrs Ridge Road. This can be done by restricting fire in that area up to a certain time, or by a mutually arranged code of signals.

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In a movement of this kind the location of the various auxiliary elements of the division must be decided upon. The motorized machine gun squadron is now located at Mount View. The distance to Taylorville is only about 14 miles, which can be made by this squadron in one hour. No use for this squadron can be foreseen during the night, and its employment during the attack cannot be determined until the plan of attack is decided upon. Consequently it seems advisable to leave it in its present location until an early hour in the morning, when the roads will be clear. A suitable time at which to move it seems to be 2:00 or 3:00 AM.

It appears that little use can be made of the engineer battalion in the attack. However, it should be at hand in case it is needed. Its location is such that it can readily join the reserve, and thus be available if necessity should arise for its use.

There will be a very decided necessity for the signal battalion prior to and during the attack. On the march it will have little to do except for the radio detachments with the various columns. Moving it at the rear of the right column will fulfill all requirements.

The trains have no place in a movement of this kind. If opposition should be encountered unexpectedly and the division forced to fall back, the trains would only tend to add to the confusion. No supplies of any kind will be necessary during the night, and sufficient ammunition, food and forage can be carried on the men and animals to last at least 24 hours. Distances are such that the trains can easily rejoin at any time as soon as the situation clears up. Therefore, all trains, division, combat and field, should remain in their present locations and await further orders.

A certain number of ambulances, however, will be necessary. In view of the fact that evacuations will have to be to a considerable distance in rear, it is believed advisable to assign one-half motor ambulance company to each of the two leading columns. It is assumed in this problem that field hospitals have been erected at Cooksville and West Friendship, consequently evacuation should be to these places.

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No reason can be seen for moving division headquarters until late at night. The situation can probably be better controlled from the present locality than it could be done by accompanying one or the other of the columns. However, headquarters should be kept close up with the advance, and the movement seems to dictate two changes for the division command post during the night.

First; a move to Freedom or Barrett about midnight.
Second; a move to Taylorsville after troops have reached that locality.

In the solution therefore two moves are prescribed, the first to Freedom at midnight, and the second to Taylorsville at 3:00 AM.

THE ORDER

1st Cav Div,
WEST FRIENDSHIP, MD.,
8 Mch 20, 5:00 PM.

FIELD ORDERS
No 10

Maps: Geological Survey, 1:62500, Ellicott, Mt. Airy and Ijamsville Quadrangles.

1. The enemy now occupies the general line, mouth of the MONOCACY RIVER—SUGAR LOAF MTN.—IJAMSVILLE—north of KEMPTON—MT. AIRY—GOSNEL. His losses have been heavy. Our air service reports a weakening of his left and a concentration west of URBANA. A reserve brigade has been located near WEST FALLS. A Red reinforcement of all arms is advancing from the north and should reach our front on the 10th.
   Our 2d Army advances from BALTIMORE on TANEYTOWN and GETTYSBURG on 10 Mch 20.
   Our army renews its attack tomorrow to drive the enemy north of LINGANORE CREEK and west of the MONOCACY RIVER.
2. This division will move tonight around the enemy's left and will attack the enemy's reserves at 7:00 AM, 9 March 20.
3 (a) The 1st Cav Brig, with 1 bn HA attached, will move at 7:00 PM tonight, via the WASHINGTON ROAD—BARRETT—RJ 817—RJ 681—PARRS RIDGE road, provisionally to a position in readiness near RJ 874. It will be prepared to attack tomorrow morning in the direction WEST FALLS—WOODVILLE.
   (b) The 3d Cav Brig, with the 1st HA (less 1 bn) attached, will move at 7:00 PM tonight, via SYKESVILLE road—FREEDOM—LIBERTY TURNPIKE—CR 838—BUFFALO road, provisionally to a position in readiness near COVER. It will be prepared to attack tomorrow morning in the direction MCDONALD—WOODVILLE.
   (c) The 2d Cav Brig will constitute the division reserve. It will move at 9:00 PM tonight, via TOLLGATE—GAITHER—BARRETT—BUCKHORN RUN—DANIEL—WINFIELD, provisionally, to TAYLORSVILLE. Upon arrival at TAYLORSVILLE, officers' patrols will be sent toward WESTMINSTER, TANEYTOWN, and EMMITSBURG to gain contact with the enemy's reinforcements advancing from the north. Early information is desired as to their progress.

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(d) The 1st HA (less 1 bn) is attached to the 3d Cav Brig. One battalion is attached to the 1st Cav Brig.
(e) The 1st MG Bn will move provisionally to TAYLORSVILLE via the SYKESVILLE road—FREEDOM—LIBERTY TURNPIKE, starting at 3:00 AM, 9 Mch 20.
(f) The 1st Bn Mtd Engrs will follow the 2d Cav Brig without distance.
(g) The 1st Obsn Sq, from its present landing field, will commence its reconnaissance at daybreak, 9 Mch 20, devoting special attention to enemy reserves near WEST FALLS and to the north and west thereof. It will report promptly all hostile movements.
(h) The 1st F Sig Bn (less dets) will follow the 3d Cav Brig without distance.
(x) 1. Brigades will insure their own security and maintain contact during the advance.
2. Brigades will take special precautions during the advance to cover their outer flanks.

4. All trains (less 2 amb cos) will remain in their present positions until further orders.
One-half amb co (mtz) will accompany the 1st Cav Brig, one-half company the 3d Cav Brig, and the animal-drawn amb co the 2d Brig. Evacuation to COOKSVILLE and WEST FRIENDSHIP.
For other details see Adm O No 12 (omitted).

5. (a) Plan of Signal Communications: No use will be made of radio between 7:00 PM, 8 Mch 20, and 6:00 AM, 9 Mch 20. Otherwise no change.
(b) Axis of Signal Communications:
Div: SYKESVILLE ROAD—FREEDOM—LIBERTY TURNPIKE—TAYLORSVILLE.
(c) Command Posts:
Div: After 12:00 midnight, 8-9 Mch 20, FREEDOM; after 3:00 AM, 9 Mch 20, TAYLORSVILLE.
1st Cav Brig: En route. After 12:00 midnight, 8-9 Mch 20, CR ½ mile south of TAYLORSVILLE.
2d Cav Brig: En route. After 2:00 AM, 9 Mch 20, TAYLORSVILLE.
3d Cav Brig: En route. After 1:00 AM, 9 Mch 20, CR 838.

A,
Maj Gen.

Copies to:
Div Staff
1st Cav Brig
2d Cav Brig
3d Cav Brig
1st MG Bn
1st Bn Engrs
1st F Sig Bn
1st Obsn Sq
1st HA
CO Tns
CG 1st Army
CG 2d Corps
CG 3d Corps

Signal Communications

MAJOR OWEN S. ALBRIGHT,
Signal Corps

This discussion deals with the signal communications of the 1st Cavalry Division (Blue) in its offensive movement discussed in the preceding pages. It covers the com-

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munications possible during the movements and preliminary to the contemplated attack, from headquarters, 1st Cavalry Division to:

1st Army at Rockville.
Cavalry brigades en route and in position.
Trains at St. Charles College.
1st Observation Squadron at Glenwood and from the observation airplane to the ground.

DIVISION HEADQUARTERS TO 1ST ARMY AT ROCKVILLE

Wire

The 1st Army has been operating from Rockville presumably for a week or more. Wire communication would probably have been established by this time from Rockville to West Friendship. During the move from West Friendship to Taylorsville wire communication cannot be expected, though a commercial line may be used if by chance one be found. A message center detachment of two clerks, one telegraph operator and two or three motorcyclists should be left at West Friendship. Messages from the division command post could be sent by motorcycle to West Friendship and relayed from there to the 1st Army by wire. Messages from the 1st Army could be sent from West Friendship to the division command post by motorcycle courier.

Radio

Radio communication from division command post to 1st Army is automatic, but should not be employed after the division command post leaves West Friendship until 6:00 AM, March 9th.

Couriers—Motorcycle

The distance from Rockville to West Friendship is approximately 20 miles, to Freedom, 28 miles, and to Taylorsville, 35 miles. Considering 25 miles per hour as conservative average speed for motorcycles, the time from the division to the army and return can be calculated. This would serve for messages of a more or less routine nature which require no great amount of urgency.

Courier—Motorcycle and Airplane

More urgent messages could be sent after daylight, March 9th, by motorcycles from the division command post

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at Taylorsville to the 1st Observation Squadron at Glenwood, thence by airplane (dropped message) to Rockville. Time required, 30 minutes from Taylorsville to Glenwood; 20 minutes from Glenwood to Rockville. No return message is contemplated by this method.

Courier Airplane

For communication during daylight hours an army airplane could be assigned as a courier airplane from army headquarters at Rockville to the 1st Cavalry Division command post at Taylorsville; messages from 1st Army to be delivered to pilot and dropped on the division panels at Taylorsville, time required, 20 minutes. Return messages from the division command post could be sent either by means of the division panels to the airplane, or by arranging a landing field in the vicinity of Taylorsville. The messages that could be sent by panel signals would be very few and simple, such as, "The attack is progressing well," "The enemy is in retreat," "I am unable to progress." It is evident that the panel signals that could be used would be those previously published in the army and division plans of signal communications.

Pigeons

With reference to communications from the division command post to the 1st Army at Rockville during the action of March 9th and the next two or three days, pigeons could be considered as a means. For intercommunication within the division itself, it is evident that pigeons could not be used. If a pigeon loft had been located at Rockville, or at some place in rear from which there was good communication to Rockville, a pigeon post could well be established with the command post of the 1st Cavalry Division and important messages sent to the army by this means. The progress of the operation and the enemy's activity on March 9th would be information desired promptly by the army. Information concerning the Red forces approaching from the northwest would also be desired as soon as gained. A pigeon post of from 8 to 12 birds, or for a minimum of 4 to a maximum of 12 messages, would be practicable provided

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the loft had been previously established, as stated above. The pigeon post could operate to include March 12th. Normally pigeons should be kept away from their loft not to exceed 3 days, although in an emergency they may be kept longer and good results probably obtained.

DIVISION HEADQUARTERS TO CAVALRY BRIGADE

Wire

It should not be considered as a foregone conclusion that wire communication cannot be used for cavalry. Its feasibility depends upon the role that the cavalry is playing. On account of the rapidity of movement, the necessary dispersion, and the uncertainty of the direction of movement of the different elements, wire communication is not practicable for cavalry on the march; nor is it practicable as a rule, when cavalry is acting as a screen or reconnoitering on the flanks, in front or in rear of advancing troops. When cavalry is massed and attacks a definite obective, wire communication is as practicable as it is for an infantry division until the attack is carried through and the elements again take up a dispersed formation.

As at present organized, however, the field signal battalion, mounted, assigned to a cavalry division, has not sufficient personnel to provide for all the means of communication employed in an infantry division. In an infantry division the field signal battalion consists of 473 officers and men, and in addition, 1 officer and 76 men compose the signal platoon of each infantry regiment. In the cavalry division the field signal battalion, mounted, consists of 259 officers and men, and in addition, 1 officer and 16 men compose the signal platoon of each cavalry regiment.

Cavalry Division	*Infantry Division*
3 Brigades.	2 Brigades.
9 Regiments.	4 Regiments.
412 Signal personnel.	777 Signal personnel.

In the problem under discussion, wire communication on the march to Taylorsville would not be contemplated. From the division command post at Taylorsville to the brigade command posts, wire communications, however, could well be employed at the beginning of the attack.

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Radio

Radio communication between division and brigades would be routine, both on the march and when in position for attack. Special precautions should be taken, however, in this particular case with reference to the employment of radio. The factor of surprise is important for this operation. If radio were used during the march, the enemy's goniometric sets could locate successive positions of our own sets and he would discover the movement around his left flank. Therefore, radio should not be employed during the march to Taylorsville unless serious contact with the Red forces is gained before reaching that position, and it should not be used in the position at Taylorsville until one hour before the attack is launched.

Couriers

Motorcycle or mounted couriers between division and brigades would be routine at all times.

DIVISION HEADQUARTERS TO DIVISION TRAINS AT ST. CHARLES COLLEGE

Communication by motorcycle courier and radio.

The reserve radio set at division headquarters should be assigned to the train headquarters for this operation if this has not been done previously during the campaign.

DIVISION HEADQUARTERS TO 1ST OBSERVATION SQUADRON

Communication by motorcycle courier and radio to the observation squadron at Glenwood would be routine. Reports of hostile movements and locations, and locations of our own troops would be dropped by an airplane normally at the division command post. In the judgment of the observer, messages of particular importance for a brigade or regimental commander may be dropped at the brigade or regimental command post. If it is desired to assign a special mission to the observation airplane, and a landing field in the vicinity of Taylorsville has not been located, communication may be obtained by radio or motorcycle to the obser-

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vation squadron at Glenwood, or by signals from the division panels direct to the airplane.

FINAL DECISIONS

Wire

It is decided not to lay field wire on the march, but to begin wire construction from Taylorsville forward. No decision as to axes of signal communication forward from Taylorsville can be made until more detailed information of the location of the Red forces can be gained and a definite attack order issued. The formation of the division and the attack direction have been tentatively decided upon. The route of advance of command posts will depend on circumstances. It is, therefore, decided to lay field wire from the division command post to the command posts of the 1st and 3d Brigades as the initial wire installation, and to follow with wire communication as far as possible during the action; to designate, if possible, a main division axis as soon as the enemy's situation develops. Wire communication from brigades to regiments would be handled in the same manner.

Radio

Radio communication, including the sets working from the division to the army, would not be employed after leaving the Frederick Turnpike until 6:00 AM, March 9th, unless serious contact with the enemy was gained before that time. After that hour, radio would be employed between units so equipped, including the division command post, divisional trains at St. Charles College and 1st Observation Squadron at Glenwood.

Couriers

Couriers, motorcycle or mounted, would be employed between all units. Motorcycles would normally be used from brigades to the successive locations of the division command post, and from the successive locations of the division command post to the trains, the observation squadron, the army, and for urgent messages to West Friendship for relay by wire to the army. Motorcycles would also be employed to

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and from regiments whenever practicable. A cavalry division has 25 motorcycles, each brigade 1, and each regiment 2.

Pigeons

Pigeon communication is found impracticable since it is presumed that there has not been sufficient time for the proper establishment of the necessary lofts with reference to the location of the 1st Army command post.

Courier Airplane

It is decided to employ one airplane from the 1st Observation Squadron as a courier airplane, if available; to arrange a landing field near Taylorsville; and to use this plane for urgent messages to the army and to the brigades and regiment as the action progresses and dispersion of elements increased. This means of communication is by a special arrangement and depends upon whether a landing field could be found when Taylorsville was reached and whether a plane of the squadron could be spared for this duty. The arrangements for this service would be turned over by the chief of staff or G3 to the air service officer and the signal officer. It is assumed that an army observation airplane is also detailed for service from Rockville to 1st Cavalry Division command post to deliver messages at a landing field near Taylorsville or by dropped message on the division panels.

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CHAPTER XI

Oversea Expeditions

LIEUTENANT COLONEL CONRAD H. LANZA,
Field Artillery

(A) LOGISTIC REQUIREMENTS.
Movement to Port of Embarkation.
Embarkation Camps.
Debarkations at Base Ports.
Convoys.

(B) LANDING ON HOSTILE SHORES.
Landings without Opposition.
Forced Landings.

(C) DEFENSE OF COAST LINES.

(D) ILLUSTRATIVE PROBLEMS.
Map Problem 1. Forced Landing by Division.
Map Problem 2. Forced Landing by a Reenforced Brigade.
Map Problem 3. Forced Landing by a Regiment.
Map Problem 4. Forced Landing by a Battalion.

(E) Note on Gas Ammunition for Navy Guns.
List of Ship Symbols.

This discussion covers briefly the tactical features connected with overseas expeditions for the School of the Line.

Tactical features of debarkations, co-operation between army and navy, the defense of coast lines, with forms for orders for joint army and navy oversea expeditions are also considered. Due to lack of any regulations on this subject, a part of this work requires approval of both the War and Navy Departments. Steps to secure approval, or modification, have been taken, and in the meantime the provisions contained herein must be accepted as provisional only.

In the preparation of this chapter COLONEL E. L. KING, Cavalry, on duty at the Naval War College, and CAPTAIN R. S. P. PRINGLE, U. S. N., have offered many valuable suggestions.

(A) LOGISTIC REQUIREMENTS

Movement to Port of Embarkation

Troops proceeding to ports of embarkation should have with them on the same train both light and heavy baggage. *Light baggage* consists of authorized bedding rolls, trunk

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lockers, and hand baggage of officers; blanket rolls and packs of enlisted men, typewriters and field desks. *Heavy baggage* includes rolling kitchens, and for tactical movements the arms, ammunition, and field and combat trains that will be required for use upon debarkation. For mounted organizations horses and horse equipment are included with heavy baggage for tactical movements.

Freight consists of all authorized equipment required by troops, but not intended to accompany them. It is shipped to port of embarkation in separate solid trains, containing neither baggage nor troops, other than a detail in charge. This includes, when tactical movements upon debarkation are not expected, animals, combat and field trains, and artillery guns and carriages. When tactical employment of troops is expected immediately upon debarkation, the freight consists of extra ammunition, supplies and generally a part of field and combat trains not expected to be required immediately upon debarkation.

Motorcycles and bicycles are light baggage and accompany troops; other motor transportation is usually freight and is shipped on the freight trains, loaded in separate cars and separately billed; but may become heavy baggage under conditions stated above.

Post exchange freight is not authorized for tactical movements overseas, except when especially allowed in particular cases.

It is important that troop baggage should be carefully boxed, or otherwise secured for transportation, and plainly marked with the name of the organization on as many sides of packages as practicable. Articles of unusual size and weight, such as large guns, wagons and trucks of special size, should be reported in advance to port of embarkation, by wire if necessary, in order that proper arrangements for loading on ships may be made.

Explosives, other than fixed ammunition, kerosene, gasoline, and other dangerous or inflammable articles, must be plainly marked as such, and loaded in separate compartments in accordance with special rules, and sent to port of embarkation on separate cars.

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When troops depart for port of embarkation, the following information should be sent by telegraph to the port authorities:

(a) Hour and date of departure of each train.
(b) Organization, down to companies, with number of officers and men in each.
(c) Number of officers and men of casual detachments.
(d) Initials and number of each car carrying baggage, with number of pieces of baggage in each car, and their total weight and cubic measurement.

Telegraphic notice of departure of freight and stock trains should also be made to the port of embarkation giving the following information:

(a) Car initials and numbers.
(b) Total cubic measurement, and number of pieces of freight in each car.
(c) Number of officers and men in charge of train.
(d) Number and kind of animals.

Embarkation Camps

Embarkation camps are located at convenient distances from points of embarkation, and are assembly points and not supply points. They are under the control of the commanding general of the port of embarkation, who is authorized to issue all orders for movements of troops in and out of them, in accordance with instructions from higher authority.

Commanding officers on arriving at port of embarkation camps will furnish its commander with a list of officers and enlisted men suitable for use in making assignments of staterooms. At least three copies are usually required. Provisional advance copies may be sent.

A small advance detail is generally sent to the ships, to arrive twenty-four hours prior to embarkation of the troops. This detail usually consists of the commanding officer, the surgeon, one other officer, a clerk, and an orderly for each of the officers. They inspect the ship, make the necessary assignments of troops to holds and staterooms in advance of arrival; draw up lists of sentinels to be posted; arrange for details for cooking or other purposes required; and have necessary orders or instructions ready for the troops upon their arrival.

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For ordinary oversea movements freight and baggage on ships can be best loaded by regular longshoremen. Employment of troops is not advisable where speed is desired. Men accustomed to loading ships will stow articles away in better shape, more quickly and more satisfactorily than inexperienced men.

For tactical movements it may be preferable for the troops themselves to load material which they will need at once upon debarkation. The same detail that is to unload the baggage should load it. In these cases, the stowing of the baggage on ships should be as directed by the ship or naval officer in charge so as not to interfere with the ship's stability, and at the same time to assure that the property will be so secured as to be safe from damage due to the ship's movement at sea.

The amount of shipping required for a division is shown in the table opposite.

Debarkations at Base Ports

Debarkations at base ports are made in the reverse order of what is prescribed for embarkations. Commanding officers should be ready to furnish such reports, lists of personnel and of property as may be required by local regulations. It is the duty of base commanders to provide necessary facilities for troops debarking, and to direct them to billets or camps, or arrange for their transportation to other destinations.

Convoys

The navigation and defense of convoys at sea are entirely under the direction of the navy. The army are passengers, and do not interfere with the formation, route or conduct of the convoy.

When transports are convoyed, the defense of transports by use of troops on board should be as directed by the commander of the naval escort.

It may be necessary to detail troops as lookouts to assist ships' crews in these duties. Good field glasses should be provided, and the horizon divided into sectors assigned to different lookouts.

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Submarines are liable to attack transports, either during the day or night. Submarines attacking during the day usually do so with only periscopes above water, which show at intervals. Machine gun and rifle fire may be advantageously used against such attacks; splashing of water in the vicinity of the periscope may interfere with observation from it, even if the submarine itself is not injured.

Submarines attacking at night may have their conning towers above water. In this case machine gun fire and rifle fire may be adjusted so as to interfere with the use of the periscope. Fire should not be directed on a submarine about to be rammed by a vessel of the escort.

Machine gun and rifle fire should be controlled by officers. The shot pattern is generally visible in the water, and the center of the shot pattern should be kept just short of the target. Machine guns may be fastened to rails or deck fittings. In this case elevating and training gear should be disconnected, and guns pointed by hand.

Field guns may be mounted on ship's decks and fired; but with crews not accustomed to firing from vessels, the motion of the ship is generally such as to make the practice unreliable. This may be corrected by employing navy gunners to lay the guns.

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(B) LANDING ON HOSTILE SHORES

Debarkations may be made where there is no opposition, or against opposition. The latter are forced landings.

When troops are to debark on a hostile shore, the naval commander and the commander of the troops travel on the same ship and consult one another frequently on all matters of common concern to the army and the navy. Experience in past wars show that the majority of failures of oversea expeditions debarking on hostile shores can be traced largely to disagreements between the army and the navy commanders, while the greatest successes have been where the army and navy commanders have worked together loyally. Every effort should be made before the start of such an expedition to have thorough co-operation between the commanders of the army and the navy forces, and between their respective staffs. Final decision as to points and methods of landing rests with the army commander, after consultation with the navy commander as to practicability of landing at points desired and the naval assistance required.

Landings Made Without Opposition

Where no opposition exists the problem is a technical and administrative one, in which the character of the beach, the kind and quantity of troops and stores to be landed, and the distances to which transports and vessels may approach the shore under various conditions of weather, are the limiting factors. In such cases a small body of troops is put ashore, and facilities for handling stores and troops are constructed by the engineers. Generally a wharf is built, alongside of which small boats and lighters can lay and discharge passengers and cargo. Connections from the wharf to the roads of the country, and facilities for protecting and storing supplies landed are next provided for.

The use of navy artillery may be useful to support a debarkation not immediately opposed. In 1898, American troops debarked south of Manila without opposition from the Spanish forces. Later the American troops received artillery assistance from the navy ships in an attack against Manila from the beachhead secured. In November, 1914,

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British troops landed in Mesopotamia at an undefended point and enlarged the beachhead by infantry attacks parallel to the water front, with artillery support furnished by ships.

Landing of artillery, especially heavy guns, with ammunition upon open beaches, is difficult, and the terrain may be such as to make the movement or employment of such artillery after landing impracticable. If the beach secured is bordered by high hills, heavy artillery on shore may be of no value until the hills are secured, and artillery emplacements and approaches thereto constructed. Valuable time may be saved by employment of artillery on ships to support attacks made by forces ashore.

Forced Landings

Where debarkation has to be made against enemy opposition the problem is always a complicated one, and is successful only when thorough preparation, with careful execution of the plan of landing, is secured.

In these movements tactical conditions are paramount, and it is absolutely essential that ships should be loaded so that stores first needed should be on top, and that the troops should be assured of the necessary arms, ammunition and subsistence immediately after landing. In this case it is generally necessary to have complete organizations on the vessel, and arrangements must be made to use space left over for other purposes.

All details of debarkation must be worked out before the expedition embarks, in order that troops and material may be so disposed that they will be able to land quickly, without confusion and in the determined order upon arrival at their destination. This requires complete orders for all details of the debarkation, including selection of landing beaches; organizations to be debarked at each beach, with order and schedule of debarkation; methods of landing infantry, artillery and materiel; zones of action, and missions of troops after landing; artillery, machine gun and air support to be furnished by naval ships; plan of signal communications; and administrative features. The exact date and hour of landing may be selected at any time, and is usually dependent on weather and sea conditions.

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The arrangements for the landing are made jointly between the army and navy commanders and their respective staffs, based upon tactical requirements and means available. As nearly all landings require special equipment, such as boats for landing, special shells for navy guns, special means of transportation and stores for troops on shore, etc., plans should be prepared well in advance for proposed expeditions, and complete lists of material required prepared showing order of loading. This material should be assembled at sea terminals. It may be assembled in times of peace, ready for instant use on outbreak of war, in accordance with approved strategical plans of the War Department, and tactical details worked out by the command designated in time of peace for the operation.

As an illustration of the trouble and delays that may be caused by an improper consideration of tactical requirements, in the first debarkation at the Dardanelles, ships arrived with cargo on top for which no facilities for unloading existed, while cargo that could be handled and was much needed was buried underneath unremovable stores. Similarly, transports were loaded with artillery troops, but with the guns on another ship, and the animals on still another ship. Such transports had to be sent to Alexandria, Egypt, the nearest available port, to be unloaded and reloaded properly. Delay and inconvenience resulted.

Landing operations against a beach defended by infantry, supported by heavy artillery, cannot ordinarily be successful. Transports do not withstand artillery fire, and navy ships ordinarily cannot be risked by subjecting them to hostile fire from heavy batteries on shore, as the loss of capital ships may endanger the control of the sea. Landing operations are therefore confined to undefended beaches, or beaches defended by infantry supported by light artillery, which possibly can be taken in part by a strategical surprise. Tactical surprise cannot be counted upon, but may occur occasionally under favorable circumstances, such as unobstructed deep water close to shore, suitable navigating marks, smooth sea, and darkness and fog to conceal ship movements from the shore.

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Surprises are difficult to accomplish, as aerial reconnaissances can be made to a long distance seaward, resulting in the timely discovery of approaching hostile fleets.

If the hostile fleet has an advance base not too far from the proposed points of debarkation, it may be possible to conceal the date of an attempt to land if the landing is not too extensive. The British were strategically unsuccessful in concealing their proposed landings at the Dardanelles in 1915, Turkish planes having discovered the approaching fleet a long distance out. But the landing of the British at Suvla Bay on the night of August 6th-7th, 1915, was a tactical surprise, and the landing at Zeebrugge in 1918 was both a strategical and a tactical surprise to the defenders on shore. In these cases it was practicable to assemble the expedition at a comparatively short distance from the point of proposed landing. Although the defenders knew of the presence of the attacking troops in their vicinity, they did not know the date or point selected for the landing. A dark night in one case, and a light fog and night in the second case enabled the attackers to accomplish surprise landings successfully.

Two kinds of forced landings may be made: One with the intent to seize and hold a beachhead with a view to further operations; and the other where there is no intention to remain permanently on shore.

Examples of the first kind of landing are those by the British at the Dardanelles in the World War, and by the French in Egypt in Napoleonic times. Examples of the second class of landing are those at Zeebrugge in 1918 and at points in the Dardanelles in 1915. The mission of the second class of landings may be to capture prisoners; to destroy hostile objectives; or as a diversion.

Debarkations made with a view to only a temporary occupancy of the shore do not ordinarily require the landing of artillery, or of supplies other than those carried by the debarkation parties. Such landings are usually small in size, and simpler than where it is intended to remain permanently upon shore. Artillery support is furnished by navy ships. The navy may also furnish machine gun support, and supply the aerial forces required.

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Forced landings made during the World War in the daytime were unsuccessful. Such landings indeed succeeded in reaching the shore, but in each case either the troops were unable to remain or were able to advance but a short distance from the beach. In general, the defenders can concentrate infantry and artillery more quickly against landing parties than can the latter. This is partly due to the ability which the enemy on shore has of determining by observations the exact size of landing parties, enabling him to dispose of support and reserves in a most suitable manner. It is sometimes possible partially to conceal landing dispositions by a smoke screen, but the possibility of the landing troops becoming lost in their own smoke must be considered.

The form of shore line may materially affect the choice of landing points. If peninsulas or promontories can be attacked near their bases, it may result in the indirect capture of hostile forces cut off by a successful attack across their line of communications. The possibility of securing converging artillery fire against the interior of land salients should be considered when islands are attacked; the size of the island and of the forces employed will be important factors in deciding the number of sides to attack. In such cases the defenders obtain interior lines; but with superior forces not too greatly separated the attackers may obtain the advantages of an envelopment.

Calculations as to the ability of the defenders to concentrate troops opposite each possible landing point, compared with the ability of the attackers in this regard, must be made to decide the *advisability* of the number and selection of beaches to be attacked. Allowance must be made for permanent works or obstacles which the defenders may have installed.

The condition of tide, local currents, and weather are important factors in landings. They may be the determining factors, and a particular combination of tide, wind, fog or moon may be necessary. Such a combination was required at the operations at Zeebrugge, and at Ostend in 1918, and about a month passed before all the required factors occurred simultaneously.

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Currents close to shore are not always shown on charts, and they may carry landing parties away from their proper destination. Especially if the landing is made at night, care must be taken to keep boats headed toward their objectives. At the Dardanelles, landings at night were at times one to two miles distant from the intended point, due to inability to recognize landmarks and to drift of boats toward a flank, on account of currents not known of beforehand.

A beach, for debarkation purposes, is any section of the shore where it is practicable to land. It may be covered with rocks, obstructed by mud flats, or by other obstacles. It may be obstructed by the defenders.

If the enemy has submarines, their interference with the landing may be material. In order to avoid being torpedoed, ships usually have to keep cruising at high speed. They cannot remain at anchor awaiting an opportunity to unload, but must unload into lighters or boats while moving, subsequently casting these off at a suitable time. The consumption of fuel by the ships may under these conditions be very large, and may cause ships to have to return to a home port or base before any opportunity to unload has occurred. Careful calculation should be made as to the length of time it will take to unload vessels with the facilities existing, and vessels should not be required to arrive in the danger zone before they are needed.

If the water in front of the proposed landing beach is known to be, or suspected of being mined, it must be swept clear before a landing can commence. The plan of debarkation must provide for this, and necessary mine sweepers provided. This is done by the navy, who must notify the army of the length of time required for mine sweeping. The transports may be kept away until the completion of the mine sweeping.

After the war has commenced, mine sweeping as feints may be undertaken. This is not ordinarily practicable for a surprise attack at the commencement of the war, and in this case if the sweeping cannot be accomplished within a few hours, a strategical surprise cannot be expected.

Underwater obstacles in front of a beach may be destroyed by depth charges or bombs dropped by naval

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launches. The plan of operations must provide for this. This duty is entirely under the navy, but the army indicates the localities where demolitions are to be undertaken.

Troops should be transferred from transports to landing boats as close to the shore as possible. This distance depends on the depth of water and the resistance met from the enemy. Transports cannot approach the shore safely under fire of heavy artillery; and if liable to be subjected to such fire, must either remain out of range, or approach at night, or under concealment of a smoke screen. Troops from transports may be transferred to naval fighting ships. Armored navy ships can stand in closer to the shore under hostile fire than unarmored transports. Torpedo boats and destroyers may be utilized for this service; these ships obtain a certain amount of safety from their high speed. Landing troops from warships, to which they had been transported from transports, was common practice at the Dardanelles. Close co-operation between the army and navy in landing is essential to success.

For the last part of the journey from ship to shore, whaleboats, arm and away boats, or similar craft are used to transport infantry with packs, arms and machine guns to shore. At first these only can be landed. Each small boat should contain a few sailors accustomed to rowing and to handling tackle. The boats are towed into shore by navy steam or motor launches and are then cast off and handled by the sailors through the breakers to the beach. The sailors then return the small boats for an additional party to be landed.

Troops to be disembarked should be practiced in rowing before departure of the expedition; also in entering landing boats from the ship, and in debarking from landing boats to shore. If this is not done, time may be lost through poor landings attempted by inexperienced men; in extreme cases the boats may be destroyed by hostile fire before a landing is accomplished, as occurred in the initial landing at the Dardanelles.

The type of boat best suited for landing is a function of local conditions. The navy selects and assembles the boats on advice from the army as to the number of men

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and character of materiel to be landed in each wave, and the rate of landing desired. The rate in time and numbers for each wave in landing is determined by the army commander after consultation with the navy commander, and is dependent upon the plan of operations, the number and kind of boats available, and the sea conditions at time of debarkation. The order of landing of troops is determined by the army.

Initial landings made by infantry should be supported by artillery fire. At first this can only be obtained by utilizing naval ships. The quantity of artillery required is determined in the same manner as in other military operations, and the number of ships required to furnish this fire can be calculated. Ships, being compact floating fortresses, can deliver an enormous volume of fire compared to the space occupied. Six modern battle ships can deliver as heavy a fire as an army corps of two divisions.

It may be necessary to have special ammunition provided for artillery support for troops disembarking. The British furnished shrapnel for guns as large as 15-inch in the Dardanelles expedition, and found it effective. Experience in the Dardanelles showed that the ordinary naval fuzes having a delay action will not destroy barbed wire, nor seriously damage personnel that is entrenched. Instantaneous fuzes should be supplied for use in large navy guns engaged in firing landward. Gas and smoke projectiles should be provided in considerable quantities.

Army artillery may be mounted on ship's decks to assist in artillery preparations covering the landing. 155-mm. howitzers are particularly valuable for this purpose in order to obtain a plunging fire against hostile troops on shore. Battle ships and battle cruisers can ordinarily furnish deck space for one battery of 155-mm. howitzers. The assignment of ships to handle army guns larger than 75-mm. in caliber must be designated in advance, as decks may have to be shored to sustain the additional firing stresses. As army gunners are untrained in firing from a rolling ship, the navy furnishes gunlayers to assist army gun crews. The army guns mounted on navy ships are under control of the navy for fire direction. The army decides when the guns are to

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be dismounted preparatory to being put ashore. As artillery cannot ordinarily be put ashore at the beginning of an operation, it is advisable to mount a part of it on ships to assist in the artillery preparation.

Smoke screens to conceal landings are most useful. They are best laid by light draft navy vessels provided with smoke laying apparatus. The wind must be favorable, and should preferably be oblique to the shore. An off shore wind may prevent an effective smoke screen being laid.

If the country is mountainous, and fire is delivered against ascending slopes, the fact that the danger zone of fire arms is greatly reduced, must be taken into consideration. If the defenders are occupying the crest of a line of hills, shots going over may go so far over as to be useless, while those falling short may bury themselves in the cliff side, causing little or no damage. In such cases severe fire from very short ranges may be necessary to cover an attack effectively. It was practicable at the Dardanelles for battle ships to approach some beaches to within 500 yards. At such distances ships can concentrate heavy fire against shore objectives.

When war ships can stand close into shore, they may bring machine gun fire to bear in addition to that of artillery. This has been in the World War a successful method of covering initial landings.

It is not generally practicable at the first stages of a forced landing to debark artillery, due to the difficulties of getting it to shore. In favorable cases when a good beach is found it may be done. The French at Kum Kaleh, on April 25, 1915, successfully debarked a battery of 75's, and the British landed one battery of light artillery at Suvla Bay on August 7, 1915. In both cases lighters were run to shore at points where the enemy was not in a position to oppose the debarkation effectively. Mountain or pack artillery was debarked by the allies in the Dardanelles at the rate of one battalion per division on the first day. Pack artillery has been debarked in forced landings made by the British in the Persian Gulf and in Arabia. Due to the ease of handling these small guns, they can be moved forward with little transportation, being hauled by man power. The

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first pack animals landed are used for ammunition supply. The terrain must be favorable to the emplacing of artillery at the time and place it is landed. This was the case in the examples quoted above, but at most of the landings made at the Dardanelles artillery did not land on the first day, due in part to the fact that the shore was so steep that guns could not be used from the beach, but could only be employed after a substantial beachhead had been secured; also due to the difficulties of landing the guns, with their draft animals and ammunition. Until the attacking troops had moved some distance inland, the necessary artillery support could not be furnished satisfactorily by the navy.

The action of units after being landed on shore does not differ in principle from that for an assault on a prepared position. In the daytime, due to ability of defenders to count ships and boats, their estimate of the situation as to number of troops opposing them at each beachhead is liable to be accurate. More determined resistance is consequently to be expected, due to more suitable employment of means of defense than in an ordinary assault where the defenders are usually in doubt as to the relative importance of attacks, and the total resources of the attackers. For this reason it is important that the attack be pushed vigorously with a view to overcoming resistance before substantial assistance can reach the defenders, and that the initial attack be made under cover of darkness followed by continuous smoke screens. At the Dardanelles no smoke was used, and the allies never made substantial progress after their first attack, as in the confined beachheads every attempt to advance resulted in receiving an enveloping fire, which could not be overcome even with the assistance of the artillery of the allied fleet. Initial landings should be driven at once to a great depth by the continuous landing of new bodies of troops. Any delay is liable to be fatal to the success of the expedition.

Due to the fact that in landing operations the troops are usually landed in successive waves, the plan of attack must provide for the use of troops as they become available. This may result in a succession of attacks with limited objectives, each advance commencing at a prearranged time,

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or on signal given when the necessary force is on shore. The commander of the troops must determine the time each tactical unit will become available on the beach.

In order to direct the attack, commanding officers should early establish their command posts on shore, maintaining communication with the supports and higher commanders not yet landed. It is the duty of the navy to maintain communication between the beach and the ships. The army extends this line of communications inland as the attack progresses.

Landing parties should preferably land under cover of darkness or fog; under such conditions landings appear to have been in the past generally successful. All landings made in the Dardanelles expedition at night succeeded in obtaining a footing on the beach. The trouble commenced after the landing, first in establishing a satisfactory beach-head, due to confusion of troops finding themselves in a totally strange country against an unknown force of the enemy, and with their own men and supplies scattered; and secondly, to difficulties of co-ordinating movements through the surf, strong currents and darkness. To lessen these difficulties landing points should be clearly marked as soon as possible by the first arrivals. This may be done by the use of signal lights displayed so as to be visible from the sea side only. Such signal lights should be of but one color, to obviate a false signal being shown should one or more lights in a combination be destroyed. White lights must not be used, as they cannot be distinguished from colored lights with broken globes.

The artillery preparation to cover the landing should be thorough, and in the nature of a general neutralization of all areas known or suspected to contain hostile combat troops. The artillery preparation is under control of the navy, but the army indicates the objectives to be fired at, and the time fire is to commence and lift. The army may assist in the preparation by utilizing guns mounted on board the ships.

The details of the artillery preparation must be worked out before sailing, in order that the right kind and quantity of ammunition may be provided on the right ship.

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The landing may be covered in part by machine gun fire from ships. The navy machine guns may be supplemented by army machine guns, utilizing particularly the reserve machine guns not needed on shore at once. As these machine guns are fastened to ship fittings, they need a minimum number of men to serve them. The machine gun fire from ships is controlled by the navy, but is directed on objectives and at times indicated by the army.

Landings made as feints were not successful as such during the World War. The allies tried several at the Dardanelles, but due to the impossibility of concealing the number of boats engaged in the operation, they failed to deceive the forces against them. Feints will probably be most useful hereafter in connection with landings made at night or during a fog, when it is impracticable for observers on shore to determine the size of the various landings made.

The experience of the World War indicates that at each beach where a landing is made, a *beach master* should be appointed. He is assisted by and co-operates with a *shore commander.*

The *beach master* is a naval officer, and has complete control of the beach. The beach is all that portion of the shore necessary for landing boats and signal stations in connection therewith. The beach master locates such signal stations; has the beach marked in order that it may be readily recognized; maintains communication by signals, or radio, with the navy; and co-operates with the shore commander.

The *shore commander* is an army officer, who works with and in co-operation with the beach master. The shore commander takes charge of all troops after the immediate vicinity of the landing point has been cleared of the enemy, and of all utilities in connection with the landing. The shore commander controls labor parties; establishment of dumps, dressing stations , and prisoners' cages; supervises all construction required; and takes such measures as may be required to prevent undue loss from hostile shell fire. He establishes a message center, and marks routes to the front. The shore commander should have a detachment of military police to assist him.

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The establishment of a message center is important, as troops are liable to have difficulty in finding parts of their units which have landed before them or which have landed at a different part of the beach.

An engineer party should be debarked soon after the first troops. It should at once establish a suitable landing place for boats. This may require removal of rocks, or in favorable cases no work at all. A wharf of some kind is usually the next work, and this should be rushed to completion with the least possible delay. Next comes the construction of ways of communication into the interior. If the country is mountainous, at first nothing more than a path up the sides of the hills and cliffs may be practicable. This may be subsequently enlarged into a trail available for pack animals, and eventually improved into a road. The laying out of lines of communication may be determined by a study of maps and aerial photographs before the debarkation.

Great confusion is liable to occur at a beach due to irregular arrival of troops and cargo, to fire from the enemy, to stragglers and wounded coming to the rear, to runners looking for people for whom they have messages. It is necessary therefore to have the beach well policed, and a sufficient number of military police should be detailed to assist the shore commander in control of traffic and stragglers.

Troops can usually carry enough rations, and infantry enough ammunition upon landing to last for one or two days, but if the landing is made in a tropical climate, the amount of water that can be carried is limited. If there are no water facilities in the country where the landing is to be made, arrangements must be provided for furnishing water. Allowance should be made for loss of some water vessels and containers through being punctured by enemy fire. Very liberal provisions for furnishing water should be arranged. The British debarkation at Suvla Bay failed largely owing to the exhaustion of troops on shore, caused by the lack of water on an intensely hot day. It is good practice to place one or more casks of water in each boat going ashore. They will not reduce the space required for troops.

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For initial supply purposes pack trains may be of the greatest value to troops debarking until such a time as roads can be established. If it appears that the country permits operation of pack trains, they should be unloaded on the first day at an early hour. Mountain artillery should similarly be gotten quickly to shore with least delay. The use of vehicles is practicable only after a beachhead of sufficient extent has been gained to enable them to operate in, and roads have been established from the beachhead over which the wagons can run.

The plan of attack must contain provisions for the supply of the troops on shore. The needs of the latter must be foreseen, and transports loaded in accordance with the plan of supply. The first administrative orders to be issued after landing must be planned before departure of the expedition, and be ready to issue at the proper time. Ordinarily few stores other than ammunition can be unloaded the first day.

Withdrawal From Landings

Should it become necessary to withdraw from a landing, while in the presence of the enemy, secrecy is absolutely essential. The withdrawal is at night, as many nights as practicable and desirable are employed. Stores and artillery are removed first, the infantry leaving last. Normal activity should be maintained during the withdrawal, except that extra raids to secure information as to hostile preparations which might interfere with the movement may be necessary. The allied withdrawal from the Dardanelles during the winter of 1915-1916 followed these principles and was completely successful, nearly all stores and all artillery being saved.

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(C) DEFENSE OF COAST LINES

Short lines of coast may be continuously defended. The Germans so defended the Belgian coast held by them during the World War, and the Turks the Dardanelles. Extensive coast lines are permanently defended in part only, important harbors being fortified to protect local resources or to deny to an assailant points suitable to him for an advance base.

An area may be defended by groups of fortifications controlling approaches. The Japanese Inland Sea is an area with important resources defended by fortifications at its entrances.

Where an entire coast line, or an important section of it, is defended, the defense in nearly all cases has been at the water's edge. This is because of the difficulty the attacker has in concealing his forces advancing over the water, and the facility the defender has of controlling his fire over the water area.

It is not necessary where coast lines are extensive to prepare the entire coast for defense. A consideration of strategical and tactical conditions as viewed by the enemy will indicate parts of the coast that are very unlikely to be attacked, as affording no suitable objectives to a landing force. The remainder of the coast must be guarded in strength corresponding to the probability of attack. The defense of a coast line is in principle the same as the defense of a river line. The most probable or dangerous points of attack are fortified or strongly held; the remainder of the line is lightly held, or kept under observation. Main forces of the defenders are kept in readiness at suitably located points, ready to be directed against any hostile forces which have landed. As troops, with their materiel, cannot be landed from ships as rapidly as they can cross the average river, and cannot receive from ships an artillery fire as effective as a numerous artillery well provided with ammunition along a river, the number of troops landed from ships is less than what might be expected along a river. The defenders of a coast line may consequently also be less than for the defense of a river line of equal length, and the main forces may be located at a greater distance from threatened points.

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It is impracticable to conceal a fleet from aerial observation, unless hidden by a fog. Aerial reconnaissance pushed seaward enables the defenders to determine the approach of hostile fleets, and nearly their exact strength. The Turks discovered the approach of hostile fleets towards the Dardanelles, and the Germans effectively watched by air reconnaissance their North Sea coast during the entire World War. Such aerial reconnaissance should be pushed at least daily to a distance equal to that which can be covered by a hostile fleet during the night. Dirigible balloons were much used for this purpose during the World War. Early information as to approach and strength of hostile oversea movements is one of the most important means of defense of a coast line.

Guarded coast lines should be amply provided with machine guns. Heavy machine guns should be freely utilized. Machine guns are located to cover water surfaces opposite beaches. Positions should be chosen with a view to concealment, and the probability of severe hostile artillery shell and gas fire in case of attack should be kept in mind. Due to the volume of fire war ships can deliver, positions on shore fronts are carefully camouflaged and a minimum number of men held in them. The beach may be obstructed by obstacles, carried in favorable cases into the water. Underwater obstacles, consisting of mines well seaward and barbed wire close to shore, should be provided when time permits. The Turks at the Dardanelles used with great success submerged barbed wire entanglements. As there is no tide at the Dardanelles, the presence of these submerged entanglements was not suspected by the allies until the attack was held up by them. Where there is a tide, the presence of underwater obstacles of this nature can hardly be concealed.

Gas in cylinders may be used to protect water fronts, the gas being released electrically as needed. Gas in drums may also be used to protect the foreground of trenches, or flanks of positions, being fired at the proper time if weather conditions are successful.

Some heavy guns to cause large ships to keep well out to sea, and some light guns to protect the underwater ob-

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stacles should be provided. The artillery of the defenders, where permanent fortifications are not installed, is usually distributed in depth, the most advanced batteries 1,000 to 2,000 yards from the beach line. All positions are concealed. Battery observation posts are well forward, overlooking beaches and water surfaces, and where time permits, strongly constructed of reinforced concrete. As light artillery is useless against armored ships, it may be placed so that at effective ranges it can just cover the beach and its approaches.

In Belgium where railroads were available, the Germans used railroad artillery to protect the sea coast, about two and one-half heavy batteries to each 1,000 meters front. Tractor artillery can be employed wherever there are roads. With either railroad or tractor artillery, batteries can be quickly installed, suitable camouflage being all that is necessary to protect them. Should batteries be discovered, they move to another location. Some artillery should be well to the front in order to compel hostile vessels to keep far away from the beach.

If an attack is made at night, or during a fog, and there is more than one point of attack, it may be difficult to determine the relative strength of landings. Such uncertainty disappears when movements are made in daylight. A plentiful supply of searchlights and star shell should be supplied to illuminate the foreground and water approaches. To provide against landings made at night, or under conditions when their relative strength is unknown, the defenders are disposed in depth, under the same principles as in any defensive problem, provision being made for counter-attacks on hostile forces which have succeeded in penetrating inland.

Supports and reserves of infantry, tanks, and light and heavy artillery should be provided back of the coast in number sufficient to attack with success the estimated number of troops that may be landed by a hostile expedition within a definite time. It is important that this time limit be a minimum, as the enemy, once firmly ashore, with the assistance of artillery from his ships, may force a lengthy campaign of stabilized warfare, which may employ large

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numbers of troops and materiel that might be advantageously employed elsewhere.

Good lines of communication from rear areas to the coast are necessary for rapid concentration of reserves, and the better and more numerous roads and railroads may be, the less will be the number of troops required to defend extensive coast lines.

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(D) ILLUSTRATIVE PROBLEMS

Debarkation on Hostile Shores

MAP PROBLEM NO. 1

Maps: Geological Survey, San Francisco Bay 1″=15.78 miles.
Monterey, 1:62500 Sheets.

NOTE:—See table at end of chapter for explanation of vessel symbols used in this problem.

General Situation:

On November 1, 1920, Blue declared war against the United States (Red). The relations between the two powers had been strained for some time.

A strong Blue fleet left the Pacific coast port north of 49° north latitude on October 28th for an unknown destination.

The greater part of the Red fleet is in the Atlantic Ocean.

Special Situation (Blue):

On November 1, 1920, the 1st Blue Corps of four divisions is moving across the Pacific Ocean by routes not ordinarily traversed by shipping. The 1st Division, under General A, with naval escort is approaching at most economical steaming rate, a rendezvous at latitude 37° north, longitude 124° west.

General A's command consists of:

1st Division.
10th Mountain Artillery.
1st Bakery Company.
1st Sales Commissary Unit.
1st Sound and Flash Ranging Company.
3d Anti-Aircraft Regiment.
Pack Trains Nos. 10, 12, 26, 42.
2,500 replacements.
10th Graves Registration Unit.
2d Military Police Company.

These troops are distributed on transports as follows:

Ship	Vessel No.	*Troops on Board*
AP	10	1st Division Headquarters.
		3d Battalion, 1st Infantry.
AP	14	1st Battalion, 10th Mountain Artillery.
AP	73	1st Signal Battalion.
		1st Engineers (less 2d Battalion) and Engineer Train.
		1st Military Police Company.

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Ship Vessel No.	*Troops on Board*
AP 84	1st Machine Gun Battalion.
	2d Machine Gun Battalion.
	2d Infantry.
	Pack Train No. 10.
AP 91	1st Brigade Headquarters.
	1st Infantry (less 3d Battalion).
	2d Ambulance Company.
AP 92	1st Light Artillery (less 2d Battalion).
AP 62	3d Infantry.
	4th Infantry (less 1st and 2d Battalions).
	1st Ambulance Company.
	1st Field Hospital Company.
AP 123	Pack Trains 12, 26 and 42.
	1st Observation Squadron.
AP 148	2d Brigade Headquarters.
	3d Machine Gun Battalion.
	1st and 2d Battalions, 4th Infantry.
	4th Ambulance Company.
AP 156	10th Mountain Artillery (less 1st Battalion).
	2d Battalion, 1st Engineers.
	2d Battalion, 1st Light Artillery.
	2d Military Police Company.
AP 94	Replacements, 2,000 Infantry.
	400 Artillery.
	100 Engineers.
AP 97	1st Sanitary Train (less 4 ambulance companies and 1st Field Hospital).
	1st Mobile Ordnance Repair Shop.
	1st Bakery Company.
	10th Graves Registration Unit.
	1st Sales Commissary Unit.
	1st Sound and Flash Ranging Company.
	3d Anti-Aircraft Regiment (guns distributed on decks of transports).
AP 116	1st Field Artillery Brigade Headquarters.
	3d Heavy Artillery (less 6 batteries, 1 each on Navy ships OCC—1 to 4, and CL—1 and 10).
AP 126	2d Light Artillery.
	3d Ambulance Company.
AP 163	1st Ammunition Train; train headquarters.
AP 180	1st Supply Train.
AH 112	Hospital, 2,500 beds (navy).
AH 124	Hospital, 1,600 beds (navy).

All troops have their combat equipment with five days' rations complete on same vessels as the troops. The fleet is accompanied by colliers and supply ships with ammunition, rations and other supplies to last General A's command for 30 days.

The entire fleet is under command of Rear Admiral N, whose escorting fleet consists of:

	Designation
4 Battle Cruisers	OCC 1 to 4.
10 Cruisers	CL 1 to 10.
12 Destroyers	DD 1 to 12.
5 Submarines	SF 1 to 5.
1 Naval Airplane Carrier	CV 1.

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The fleet is steaming at 10 knots per hour.

General A received prior to sailing the following instructions from his government:

"The 1st Blue Corps, consisting of 4 divisions, will proceed with the view to landing on the California coast on the night of November 1-2, 1920, or as early thereafter as practicable.

"The expedition will be secret. Ships will move under protection of the navy in such manner that their arrival opposite the California coast will remain undiscovered to the latest possible date.

"Our ambassador in Washington will receive instructions to present an ultimatum to the Red government at 6:00 PM, November 1st, Washington time, calling for compliance within 4 hours. The conditions of the ultimatum are such that it is expected that the Red government cannot comply with its terms. Unless otherwise advised you will assume that a state of war exists from 10:00 PM, Washington time, November 1.

"The 1st Division will be landed at Monterey Bay with the mission of:

(a) Assisting the navy in establishing a base.

(b) Advancing at once towards San Francisco and capturing that city and harbor.

"The landing will be made on the night of November 1-2, or as soon thereafter as weather conditions permit. It is known that the Reds have not mined Monterey Bay or vicinity. No underwater obstacles existed on October 27th.

"The 2d Division will force a landing at the same time near Redondo Beach (near Los Angeles).

"The 3d and 4th Divisions with corps headquarters will arrive off the California coast on the night of November 3-4, and will re-enforce such one of the landings made by the 1st and 2d Divisions as the corps commander may decide.

"You will keep the corps commander completely informed by wireless of the exact situation in your front, and of all information concerning the enemy that you can obtain.

"The following hostile forces may be encountered by you:

(a) The 7th Regular Division in camp near San Jose, California, at about one-half its normal war strength. Only two light regiments of artillery are with this division, and only three guns per battery can be manned.

(b) The 9th National Guard Division expected to be mobilized at about war strength. Information received indicates that about half this division will be at Monterey Bay, and the other half in the vicinity of San Francisco. No other Red troops are expected to be in the vicinity of Monterey, nor is it deemed practicable for Red troops other than those mentioned to arrive in the vicinity of that point within 4 days. It is desired that within this time your command will make a considerable advance toward San Francisco, in order that this city may be captured with the assistance of additional divisions to be landed later.

"The corps commander has authority to withdraw the 2d Division from Redondo Beach to reenforce your front should such action be considered advisable.

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"The Blue navy has made arrangements for protecting your ships from hostile naval interference.

"You will confer with Rear Admiral N, and make your arrangements for landing jointly with him. Rear Admiral N will render every possible assistance both during and after the landing."

During November 1st a hostile hydroplane was observed reconnoitering the convoy of ships from a distance. The plane disappeared about 5:00 PM towards Farallon Islands.

* * * * * *

Required:

General A's formal field orders for his proposed landing in Monterey Bay, prepared prior to sailing, except as to hours and dates, and to be issued at the proper time.

NOTE 1:—Assume that at time of declaration of war, which is 7:00 PM, Pacific time, the sea is smooth, and weather indications for next 24 hours are light northwest winds. Smooth sea; 100 per cent visibility. No further orders or information concerning the enemy have been received.

NOTE 2:—The reserve machine guns with the 1st Division, with four men per gun, were distributed prior to sailing on navy ships DD One to Twelve.

Forced Landing on Hostile Shore

AN APPROVED SOLUTION

Field Order for Debarkation Forced Landing

* * *

1st Division,
AT SEA,
Lat. 37° North,
Long. 125° West,
1 November 20, 7:00 PM.

FIELD ORDERS
No 10

Maps: Geological Survey Map, San Francisco Bay, 1"=15.78 miles.
Monterey and Capitola Quadrangles, 1:62500.

1. (a) War between our country and the Reds exists from this date and hour.
   (b) About one reinforced brigade of Red National Guard Troops is understood to be in the vicinity of MONTEREY. The 7th Red Division at one-half war strength is in camp at SAN JOSE, CALIFORNIA, and can be expected to arrive in the vicinity of MONTEREY six hours after being alarmed. No other Red military forces and no Red naval forces are known to be in the vicinity of MONTEREY BAY.
   (c) Our 2d Division will land early on November 2, at REDONDO BEACH (near LOS ANGELES). Our 3d and 4th Divisions will be available for landing on November 4.

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2. The 1st Division, at 6:00 AM, November 2, will land on both sides of the MONTEREY PENINSULA, with a view to advancing provisionally on SALINAS. The Navy has charge of the landing of troops, and will furnish support as indicated hereafter.

Troops

(a) Detachment "A"
Brig Gen B
1st Brig (less 3d Bn 1st Inf)
1st Bn 10th Moun Art
1st Engrs (less 2d Bn and 1 co)
1st MG Bn
Pack Tn No 10
2d Amb Co

Beach Party
Capt X, Navy;
Beach Master
Navy Det

Shore Party
Col M, 1st Div Tn (Shore Cmdr)
1st MP Co
1 co 1st Bn 1st Engrs

(b) Detachment "B"
Brig Gen C
2d Brig (less 2d Bn 4th Inf)
10th Moun Art (less 1st Bn)
2d Bn 1st Engrs (less 1 co)
1st and 4th Amb Cos
Pack Tns Nos 12 and 26

Beach Party
Capt Y, Navy;
Beach Master
Navy Det

Shore Party
Maj O, 1st Div Tn (Shore Cmdr)
2d MP Co
1 co 2d Bn 1st Engrs

(c) Reserves:
2d Bn 4th Inf
3d Bn 1st Inf
1st FA Brig
3d Amb Co

(d) Artillery:
(See Navy Campaign Orders Nos 1 and 2 attached.)

3. (a) Detachment "A" will land at 6:00 AM, at south end of MONTEREY BAY, between LAGUNA DEL REY, and CEMETERY ½ mile west of the HOTEL DEL MONTE. It will seize high ground southeast of point of landing; and will advance without delay on SALINAS, connecting with Detachment "B." The Navy will land 1,550 men of this detachment with equipment at 6:00 AM, same number hourly thereafter, beach and shore parties in addition.

(b) Detachment "B" will land at 6:00 AM, at CARMEL BY THE SEA. It will seize the high ground near DEVILS HILL and LOMA ALTA; and will cover right flank of Detachment "A," clearing the heights north of CARMEL RIVER. It will support the advance of Detachment "A" toward SALINAS. The Navy will land 1,500 men of the detachment "B" at 6:00 AM; same number hourly thereafter.

(c) Reserves will remain on transports, subject to my orders, prepared to land at 10:00 AM, November 2, except as indicated in par (d) (3) below.

(d) (1) The artillery support will be furnished by the Navy. There will be an artillery preparation; commencing at 5:00 AM. High ground in the vicinity of HUCKLEBERRY HILL, will be gassed with persistent gas and blinded as necessary. The high ground in the vicinity of LOMA ALTA and DEVILS HILL will be attacked with non-persistent gas and shell. The advance of the infantry will be covered by neutralizing fires and smoke. DEL MONTE and its HOTEL will be set on fire commencing at 5:00 AM.

(2) The initial landing of troops will be protected by an intense fire of shell and smoke from ships close in to shore.

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(3) The 3d Heavy Artillery, with guns now mounted on Navy ships, will assist in the artillery preparation, under direction of the Navy, and be prepared to commence landing at 4:00 PM, November 2.

(4) The 3d Anti-Aircraft Regiment with guns now mounted on ships, will, in co-operation with Navy Anti-Aircraft guns, furnish protection against hostile aircraft, and be prepared to land at 10:00 PM, November 2.

(e) *Machine Guns.* (See Navy Orders Nos 1 and 2 attached.)

(1) The initial landing of troops, and flanks of troops landed will be protected by machine gun barrages furnished by the Navy.

(2) The reserve army machine guns, now mounted on Navy ships will assist the Navy, and be prepared to land at 5:00 PM, November 2.

(f) *Air Service.*

Navy aircraft contact planes will pass hourly over the lines. Planes will be constantly assigned to artillery reconnaissance duty. Roads along CARMEL RIVER, through CANYON DEL REY and through NASHUA will be watched.

(g) *Engineers.*

After landing, engineer troops attached to shore parties will at once construct facilities for landing artillery.

(x) *General Instructions.*

Detachment commanders will furnish complete and early information by every available means to the division commander, to enable the reserves to be used to maximum advantage.

4. (a) Stations for slightly wounded will be established at each landing beach.

(b) See Administrative Orders No 1A and 1B.

5. (a) Plan of signal communications: No change.

(b) Axes of signal communication:
Detachment "A": DEL MONTE; SALINAS.
Detachment "B": CARMEL BY THE SEA; DEVILS HILL; LOMA ALTA.

(c) Command posts:

(1) 1st Division with Rear Admiral N commanding fleet on BB One.

(2) Detachment "A": DEL MONTE.
Detachment "B": CARMEL BY THE SEA.

(x) (1) The Navy will maintain communication between ships and beaches.

(x) (2) Artillery fire will be controlled as follows:
For landing at MONTEREY: from OCC One.
For landing at CARMEL BY THE SEA: from OCC Two.

(Signed) "A"
Major General.

Distribution:

40 Copies to Navy, for each ship and each staff.
12 Copies to 1st Brigade.
12 Copies to 2d Brigade.
12 Copies to 1st Field Artillery Brigade.
4 Copies to 10th Mountain Artillery.
4 Copies to 3d Anti-Aircraft Regiment.
4 Copies to Pack Trains.
2 Copies to 1st Military Police Company.
2 Copies to 2d Military Police Company.

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1 Copy to Colonel M, Shore Commander.
1 Copy to Major O, Shore Commander.
4 Copies to 1st Engineers.
2 Copies to 1st Observation Squadron.
4 Copies to Commander of Trains.
1 Copy to 1st Bakery Company.
1 Copy to 1st Sales Commissary Unit.
1 Copy to 1st Sound and Flash Ranging Company.
1 Copy to Commanding Officer, Replacements.
1 Copy to 10th Graves Registration Unit.

NAVAL ANNEX TO FIELD ORDERS NO 10, 1ST DIVISION

CAPTAIN J. R. P. PRINGLE,
U. S. Navy

Blue Escort,
OCC-1 FLAGSHIP,
Latitude 37°,
Longitude 125°,
1 November 20, 10:00 PM.

CAMPAIGN ORDER No 1

TASK ORGANIZATION.

(a) *Monterey Force*:
OCC One, Two.
CL Division One, plus CL Ten.
DD Division One.
CV One.

(b) *Carmel Force*, Rear Admiral M:
OCC Three, Four.
CL Division Two, less CL Ten.
DD Division Two.

(c) *Scouting Force*:
SF One to Five.

1. War between our country and Blue exists from 7:00 PM, this date. No hostile naval forces known to be in vicinity of MONTEREY PENINSULA. Enemy land forces in vicinity consist of one-half division of regulars and one-half division of National Guard with 3-inch and 6-inch field guns. Our 2d Division will force landing on REDONDO BEACH at 6:00 AM, 2 Nov. Our 3d and 4th Divisions under naval escort are due to arrive off CALIFORNIA COAST during night of 3-4 November.
2. This force will assist and support the landing of our 1st Army Division on both sides of MONTEREY PENINSULA at 6:00 AM, 2 November.
3. (a) *Monterey Force*: Assist and support the landing of Detachment (A) on the northern side of MONTEREY PENINSULA between LAGUNA DEL REY and the CEMETERY one-half mile west of the HOTEL DEL MONTE. OCC One, Two anchor on line of bearing 116—296, distance 1,000 yards, southern ship BB One with POINT PINOS LIGHT bearing 279, distance 3,000 yards. Gas and blind high ground in vicinity of HUCKLEBERRY HILL using persistent gas. Commence 5:00 AM, discontinue upon signal. CL Division One plus CL Ten, anchor on line of bearing 45—255, distance 1,000 yards, northern ship BS One in ten fathoms water with POINT PINOS LIGHT bearing 264. Shell coast, destroy enemy gun positions, drive

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enemy force back from beach, destroy railroad and road bridges across SALINAS RIVER, burn DEL MONTE and HOTEL. Commence 5:00 AM, discontinue upon signal. Support landing by machine gun fire. Support advance of army inland as per FO 1 Det A. DD Division One accompany AP to rendezvous. When signal to land is made lay smoke screen between CL and beach. Support landing by machine gun fire. Maintain screen until landing is effective.

CV One accompany AP to rendezvous. Commence observation flights over enemy positions at daylight. Spot over HUCKLEBERRY HILL and DEVILS HILL.

(b) *Carmel Force*: Assist and support landing of detachment (B) on the south side of MONTEREY PENINSULA at CARMEL BY THE SEA.

(c) *Scouting Force*: Form on arc of circle radius 20 miles with center at POINT PINOS LIGHT northern ship SF One in latitude 36—51, longitude 122—15 scouting distance 11 maintain line.

(x) Rendezvous POINT PINOS LIGHT, bearing 156, distance 12,000 yards. Seventy-fifth time.

4. Fuel train, auxiliaries and transports of detachment (A) proceed to rendezvous. Transports of detachment (B) proceed with CARMEL Force.

5. Cipher A. Wave length 500. Escort commander in OCC One.

By order of Rear Admiral N,

B,
Captain, Chief of Staff.

By radio to:
Rear Admiral N.
General A.
Commander 2d Army Division.
Commanding General, 3d and 4th Divisions.
Commander Naval Escort, 3d and 4th Divisions.

* * * * * *

NOTE:—Rear Admiral N will issue a simflar order to the foregoing (not given here), covering proposed action of the Carmel force, and referred to in 1st Division Field Orders No. 10 as Naval Annex No. 2.

Map Problem No. 2

Maps: Same as for Map Problem No. 1.

General Situation:

Same as for Map Problem No. 1.

Special Situation:

Same as for Map Problem No. 1 with approved solution and naval annex.

* * * * * *

Required:

General B's formal field orders for the proposed landing of Detachment "A" in Monterey Bay, prepared prior to sail-

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ing, except as to hours and dates, and to be issued at the proper time.

NOTE:—See Notes 1 and 2, page 1136, which apply also to this problem.

The strength of the organizations for landing is as follows:

Rifle companies of infantry	200 men
Headquarters company of infantry (less band and administrative sections)	200 men
Machine gun companies	100 men
Mountain artillery battery (Animals to be swum ashore.)	150 men
Engineer company	150 men

All other organizations as shown in Tables of Organization.

AN APPROVED SOLUTION

Discussion

General B's command is distributed on transports 14, 73, 84 and 91 as indicated in Special Situation, Map Problem No. 1. The arrangement for landing provides that the navy will land 1,550 men at 6:00 AM, and the same number hourly thereafter until the entire command is ashore. General B's mission, the direction of his attack and the axis of communication are given in Field Orders No. 10, 1st Division. It is General B's duty to determine the organizations that will be landed in each wave, and their conduct after reaching shore.

The flanks of the beach assigned to General B are bounded by lakes which, together with machine gun barrages provided for in paragraph 3 (e), Field Orders No. 10, 1st Division, should protect General A's forces from counter-attacks on his flanks until after he has passed the road 40—7—25—south end of Laguna del Rey. Beyond this road an advance is liable to be counter-attacked from the front or either flank.

The right flank is in part protected by the provision for placing persistent gas on Huckleberry Hill, which should interfere with hostile infantry and machine gun fire, or infantry attacks from this direction. Attacks from the direction of Devil's Hill or Loma Alta should be largely neutralized by the artillery preparation provided for in the division field order, and by the attack on these places to be made

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by Detachment B. Hostile positions east of Laguna del Rey and Seaside, on the slopes of Del Monte Heights should, to some extent at least, be neutralized by naval artillery and machine gun fire.

The line of advance for General B's forces, indicated as at first southeast, then to advance without delay on Salinas, will require an advance up the Canyon del Rey. This canyon is a defile, and the duty of General B's forces will be to secure the entrance to this canyon in the vicinity of 162; then to proceed through the canyon proper, driving the enemy out of any positions he may hold, and to continue the advance. As the country in the vicinity of this canyon appears from the map to be very rough, artillery assistance from the ships cannot be expected after the troops have once entered the canyon. General B must be prepared to push through with his own forces.

In order to secure the entrance to the canyon, the capture of hills 258, 315, and 281 appear to be essential. For the capture of these positions, the assistance of the artillery of the navy should be obtained. Beyond these points, a large part of the territory in which hostile troops might resist will be defiladed from the ships' view, and while navy artillery fire may be obtained, General B must depend largely upon his own troops on shore.

In capturing the hills at the mouth of the canyon, the attack may be made in either of the following ways:

(a) Attack and seize successively, hills 258, 315 and 281.
(b) Attack the hills west of the stream line B.M. 169; 124; Laguna del Rey; to hill 286 and the high ground in vicinity thereof with one force, while simultaneously attacking hills 180; 262; and 281 with a second force.

There are other possible methods involving the attack of ground further to the right and left, but such an action should be avoided in view of the necessity of occupying the defile of the Canyon del Rey before hostile reinforcements can arrive to support the Red troops already in this vicinity.

General B therefore decides to limit his action to the seizure of the ground immediately adjacent to the west entrance of the Canyon del Rey, depending upon Detachment B to support in part his right flank, and the navy artillery for general support; and then to proceed by vigorous

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advances toward Salinas by dispositions ordered later, depending on developments of the situation.

The duties of the initial wave of troops landed must be to clear the vicinity of the beach of hostile troops so as to make the landing of succeeding waves as safe as possible. The landing of this initial wave is to be protected by a smoke screen, and by machine gun and artillery fire. If the artillery sets on fire the buildings in Del Monte, commencing with the artillery preparation at 5:00 AM as provided in paragraph 3 (d) (1), the use of this area for sheltering machine gun nests will be largely denied to the enemy. It would appear practicable then for troops to have a good chance of success in reaching in a single drive the road 40—7—25—south end Laguna del Rey. Beyond this point strong hostile resistance must be expected and the attack must be made in force.

General B considers it preferable to have one regiment attack hills 155, 258, 315 and 286 in one continuous operation, while the second regiment, landing in rear of the first, will cross the stream line B.M. 169—124—Laguna del Rey, and attack hills 180, 262 and 281. Action beyond these points will depend upon the enemy's dispositions and the results of the action up to this point. It is impossible to foresee what this will be, and initial preparations can be made only for the seizure of the hills indicated.

General B issues the following order:

FIELD ORDER FOR DEBARKATION

FORCED LANDING

(Brigade)

DETACHMENT "A,"
AT SEA
Lat. 37° North.
Long. 125° West.
1 November 20, 8:00 PM.

FIELD ORDERS
No 1

Maps: Geological Survey Maps, San Francisco Bay, 1" = 15.78 miles. Monterey Quadrangle, 1:62500.

1. (a) War between our country and Red exists from 7:00 PM this date.
   (b) About one reinforced brigade of Red National Guard Troops is understood to be in the vicinity of MONTEREY. The 7th Red Division at half strength is in camp at SAN JOSE, CAL-

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IFORNIA, and can be expected to arrive in the vicinity of MONTEREY six hours after being alarmed. No other Red military forces, and no Red naval forces are known to be in the vicinity of MONTEREY BAY.

(c) Our 2d Division lands early on November 2, at REDONDO BEACH near LOS ANGELES. Our 3d and 4th Divisions in support will be available for landing on November 4.

(d) The 1st Division, at 6:00 AM, November 2, will land on both sides of the MONTEREY Peninsula, with a view to advancing provisionally on SALINAS. The Navy has charge of the landing of troops, and wil' furnish support as indicated hereinafter. Detachment "B" will land at CARMEL BY THE SEA, advancing on DEVIL'S HILL and LOMA ALTA, covering the right flank of our detachment.

Artillery (See Campaign Orders No 1, Navy, attached.)

(1) Artillery support will be furnished by the Navy. There will be a preparation, commencing at 5:00 AM. High ground in vicinity of HUCKLEBERRY Hill will be gassed with persistent gas, and blinded as necessary. High ground in vicinity of DEVIL'S HILL and LOMA ALTA will be attacked with non-persistent gas and shell. The infantry advance will be protected by neutralizing fires and smoke. Fire will lift on points noted below at hours indicated, unless request is received from the infantry to cease firing at earlier hours:

Hill 155	8:30 AM.
Hill 258	9:00 AM.
Hill 180	10:00 AM.
Line through hills 315 and 262	11:45 AM.
Line through hills 809, 286 and 281	1:30 PM.

(2) The initial landing of troops will be protected by intense fire of shell and smoke from ships close in to shore. DEL MONTE and its Hotel will be burned commencing at 5:00 AM.

Machine Guns. (See Campaign Order No 1, Navy, attached.)

(1) The initial landing of troops and flanks of troops landed will be protected by machine gun barrages furnished by the Navy.

(2) The reserve army machine guns, now mounted on Navy ships, will assist the Navy and be prepared to land at 5:00 PM, November 2.

Air Service.

Contact planes will pass hourly over the lines. Planes will be constantly assigned to artillery reconnaissance duty and will watch roads along CARMEL RIVER, through CANYON DEL REY, and through NASHUA.

2. Detachment A at 6:00 AM, November 2, will land in the vicinity of DEL MONTE for an advance through CANYON DEL REY toward SALINAS.

3. (a) 2d Infantry (1st Machine Gun Battalion attached), will land 1,500 men on the beach north of DEL MONTE at 6:00 AM; balance of command at 7:00 AM. It will advance at once, seizing the east and west road on the south edge of DEL MONTE through 25 and between the cemetery and LAGUNA DEL REY. At 8:00 AM it will jump off from this road, attack and seize hill 155 and co-operating with the 1st Infantry will attack and seize hill 315 and high ground in the vicinity of 286. It will prepare to advance up the CANYON DEL REY immediately after reaching this objective, and will obtain communication with Detachment B.

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(b) 1st Infantry (less 3d Battalion, with 2d Machine Gun Battalion attached) will land 1,500 men at 8:00 AM, and balance at 9:00 AM. It will form in rear of the 2d Infantry, will cross stream line B.M. 169; 124; LAGUNA DEL REY; attacking and seizing hills 180, 262 and 281. It will prepare to advance up the CANYON DEL REY.

(c) 1st Battalion, 10th Mountain Artillery (Pack Train No 10 attached), will land one battery at 9:00 AM, balance of battalion at 10:00 AM. First battery landed will remain south of stream line B.M. 169; 124; LAGUNA DEL REY; and will attack hostile detachments interfering with the advance of the infantry. Remaining batteries will proceed to north of same stream line, immediately attacking hostile detachments. Special attention will be paid to crossing fire across the CANYON DEL REY.

(d) 1st Engineers (less 2d Battalion and 1 company) will land at 10:00 AM and will construct at once facilities for landing stores and light artillery.

(x) Hostile resistance will be overcome at earliest possible moment. Exploitation will be extended vigorously. Where there is little resistance, the advance will be pushed rapidly to the western exit of the CANYON DEL REY, which will be seized. Regimental commanders are authorized to request artillery fire lifted on their fronts.

Bands and administrative sections will remain on transports until further orders.

4. (a) 2d Ambulance Company will land at 11:00 AM and will establish dressing station at beach.

5. (a) Plan of Signal Communications:
1. Navy system from beach to ships.
2. No other change.

(b) Axes of Signal Communications:
Detachment A: DEL MONTE—B.M. 84—B.M. 169—B.M. 425.
1st Infantry: South edge of LAGUNA DEL REY—hill 180—hill 262—hill 281.
2d Infantry: Same as Detachment "A."

(c) Command Posts:
Detachment A: Closes on AP 91 at 9:00 AM, and opens same hour on beach near letter "N" of DEL MONTE.
1st Infantry: Beach, vicinity of hill 87.
2d Infantry: Beach, vicinity of "L" in DEL MONTE.

(x) Artillery fire from ships is controlled from OCC One.

B,
Brigadier General.

Distribution:

Copies to: Senior Naval Officer APs 14, 73, 84 and 91.
The Chief Gunnery Officer, OCC One.
Naval Officer command convoy (20 copies).

CG 1st Division (10 copies).
1st Infantry.
2d Infantry.
1st Machine Gun Battalion.
2d Machine Gun Battalion.
1st Battalion, 10th Mountain Artillery.
Pack Train No 10.
1st Engineers.
2d Ambulance Company.
Colonel M, Shore Commander.
CG Detachment "B," (10 copies).

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ADMINISTRATIVE ORDER

FORCED LANDING

(Brigade)

1st DIVISION
AT SEA.
Lat. 37° North.
Long. 125° West.
1 Nov, 8:00 PM.

ADMINISTRATIVE ORDERS }
No 1A }

(For Detachment "A")
(To accompany FO No 1)

NOTE: Administrative Order No 1B issued for Detachment "B."

Maps: Geological Survey Map.
Monterey Sheet, 1:62500.

I. BEACH AND SHORE PARTIES.

A. The *beach master* has complete authority over boat movements, and debarkation of troops and materiel on the beach.

B. The *shore commander* locates all dumps, dressing stations, assembly points for troops, control message center; takes charge of all utilities on and in the vicinity of beach; determines location of wharf after consultation with engineers and beach master. Co-operates with and assists beach master.

C. 1st MP Co lands 100 men at 6:00 AM, balance of company at 8:00 AM.

II. SUPPLY.

A. *Rations*:

Troops:

Provide three days' rations to be carried on person. No rations will be debarked Nov 2.

B. *Ammunition*:

Artillery:

Commences to arrive on beach at 11:00 AM.

Infantry:

Commences to arrive on beach at 3:00 PM. Refilling point at beach.

C. *Engineer Material*:

Material for wharf construction will be unloaded as soon as troop movements permit.

D. *Water*:

No water debarked. Water will be obtained locally.

III. EVACUATION.

A. *Men*:

1. Collection:

a. Dressing station will be established on beach by 2d Amb Co about 11:00 AM.

b. Ambulance transportation will go ashore on afternoon of Nov 2.

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2. Hospitalization:
   Hospital cases to AH 12.
3. Animals:
   1. Evacuate to 1st MV unit, which will go to beach on afternoon of Nov 2.

IV. ROADS.

A. Road 17—25—B.M. 84—195—162—B.M. 169; available for 2d Infantry, 1st Mountain Artillery and attached troops. Available for other troops after line hill 286—hill 281 has been secured.

B. *Engineer troops*: Land at 10:00 AM. Construct wharf for landing divisional artillery immediately after landing. Improve and open road indicated in the preceding paragraph.

C. *Traffic control*: Shore commander makes details from MP Company to control road traffic.

V. SALVAGE AND BURIAL.

A. *Salvage*:

Dump: At beach as indicated by the shore commander.

B. *Burial*:

Chaplain R, 10th Gr Reg Unit, in charge of burials. Details will be announced later.

VI. MILITARY POLICE.

Shore commander controls military police; polices beach and vicinity thereof; pushes forward MP control as advance progresses.

VII. PRISONERS OF WAR.

A. Prisoners will be sent to beach and turned over to shore commander. G2 will have a representative at the beach to examine prisoners.

B. Prisoners will be forwarded from beach to AP 91.

A,
Maj Gen.
Commanding.

Distribution:

Naval Officer commanding convoy (6 copies).
1st Infantry.
2d Infantry.
1st Machine Gun Battalion.
2d Machine Gun Battalion.
1st Battalion 10th Mountain Artillery.
Pack Train No 10.
1st Engineers.
2d Ambulance Company.
Colonel M, Shore Commander.
CG Detachment B.

Map Problem No. 3

Maps: Same as in Map Problems 1 and 2.

General Situation:

Same as in Map Problems 1 and 2.

Special Situation:

Same as in Map Problems 1 and 2, with solutions.

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Required:

The orders of Colonel C, commanding 2d Infantry.

An Approved Solution

Discussion

Colonel C's mission is to land in two waves at 6:00 and 7:00 AM and advance not later than times specified in Problem 2, to capture the series of hills in front of his landing beach, and secure the west entrance to the Canyon del Rey.

The 1st Infantry after it has landed will cover the left flank of the 2d Infantry. As the first wave of the 1st Infantry is not due to arrive at the beach until 8:00 AM, the action of this regiment cannot be expected to be felt before 9:00 AM. The right flank of the 2d Infantry will be protected in part by artillery fire along the right, and towards Devils Hill and Loma Alta, and by the attack of Detachment B, on Devils Hill and Loma Alta from Carmel by the Sea. While this attack will at first be detached from the action of the 2d Infantry, it should occupy a considerable portion of any hostile forces in the direction of Devils Hill, relieving the 1st Infantry of the probability of counter-attack from that direction.

Very little information is known concerning the enemy. Apparently about one-half a division is occupying the territory in the vicinity of Monterey. It is to be expected that the entire coast line will be watched, and that the main part of the hostile forces will be some distance back from the beach in points centrally located, with a view to being pushed toward the sea when definite information is known concerning the landing of the Blue troops.

The approach of the Blues is to be masked by:

(a) A bombardment commencing at 5:00 AM against the coast line of Monterey Bay and of Carmel Bay.

(b) By smoke screens, put down by the navy, which if the wind is favorable, should enable small boats in the darkness of early dawn to approach the beach without being discovered until arrival. The immediate landing place of the 2d Infantry is to be protected by bombardments expected to set fire to the town of Del Monte and hotel; by flanking machine gun barrages; by direct artillery and machine gun preparation, and by the lakes on each side of the landing position.

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The important points near the beach which must be immediately seized are: the ridge just north of the railroad; the park about the Hotel Del Monte which might conceal machine gun nests; Monterey; and the open ground between 17 and the race track. The immediate mission of the first wave would be to secure the ridge through 87, followed by an advance on the Hotel Del Monte Park and toward the race track.

The first wave of 1,500 men will admit of six companies of infantry and two machine gun companies being landed. This naturally suggests sending two battalions (less one company each), with one machine gun company attached to each battalion. The missions of these battalions would be, one battalion to land opposite the Hotel Del Monte and advance and clear out the park about that place, and Monterey; the other battalion to land at 87, clear the ridge to the railroad, then advance to the east and west road through 25. The attack is to be protected on its left flank by a machine gun barrage from the ships, and on the right, after the Hotel Del Monte Park has been captured, by machine gun barrages up the ravine leading into east edge of the lake at the cemetery.

The distance from the beach to the road through 25 is about 1,200 yards. Even under advantageous circumstances troops would take some fifty minutes to cover this distance in an attack. Due to darkness during the early morning and the difficulty of landing it may take longer. The regiment should be ready to jump off in a new attack from this road by 8:00 AM, after allowing time to secure and consolidate the initial positions seized.

At 8:00 AM, the action of the 1st Infantry will not have commenced. It is possible that the enemy may not occupy the hills near Del Monte, or do so only in a small force, but this cannot be counted on. Necessity exists for strong artillery support to protect the advance toward hill 258 and the hills to be seized later. This has been done by providing for supporting artillery fire to be lifted by schedule; or earlier should it appear that the enemy fails to strongly defend these hills. To obtain prompt communication from front lines to the signal station on the beach con-

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necting with the ships, signal detachments must take special measures.

Consideration must be given as to whether the advance beyond the east and west road through 25 to hill 258 will be made by the troops that occupied that point or by troops landed later. It is impossible to foresee what losses troops in the first wave will suffer. It appears surer to use troops of the battalion which lands at 7:00 AM. The flanks of the attack of this battalion can be protected by the troops of the battalions first landed.

The method of attack beyond hill 258, Colonel C will determine after the capture of that hill after estimating the situation as it then appears, and after selecting the troops best fitted for this task.

Colonel C issues the following order:

FIELD ORDER FOR DEBARKATION

FORCED LANDING

(Regiment)

2D INFANTRY
AT SEA
Lat. 37° North.
Long. 125° West.
1 Nov 20. 9:00 PM.

FIELD ORDERS
No 10

Maps: Geological Survey Maps, San Francisco Bay, 1" = 15.78 miles. Monterey Quadrangle, 1:62500.

1. Information contained in pars. 1, 3 (b) and 3 (c) of FO 1, Det A omitted.

2. The 2d Inf commencing at 6:00 AM, November 2, lands on beach north of DEL MONTE, to advance provisionally on the south side of the CANYON DEL REY.

Troops

(a) Maj D, 2d Inf.
1st Bn (less Co D).
MG Co 2d Inf.
1 sec 1-pdr 2d Inf.
1 sec SM 3", 2d Inf.
Sig Det, 2d Inf.

(b) Maj K, 2d Inf.
2d Bn (less Co H).
Co A 1st MG Bn.
1 sec 1-pdr 2d Inf.
1 sec SM 3", 2d Inf.
Sig Det, 2d Inf.

3. (a) 1st Bn (less 1 co): land at 6:00 AM north of Hotel DEL MONTE. Advance, seize and hold south edge of park about the Hotel. Send strong combat patrols to front and right flank. Support attack of 2d Bn by exploiting vigorously south of Hotel DEL MONTE. Clear MONTEREY of machine guns firing over approach to landing beach.

After advance of 2d and 3d Bns, as indicated in paragraph 3 (b) and 3 (c), cover right of Brigade against hostile counter-attacks. Obtain contact with Det B.

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(c) Maj L, 2d Inf.
3d Bn.
Co B 1st MG Bn.
1 sec 1-pdr 2d Inf.
1 sec SM 3", 2d Inf.
Sig Det, 2d Inf.

Reserves

(d) Lt Col M, 2d Inf.
Cos D and H, 2d Inf.
1st MG Bn (less Cos A and B).
Pion Plat 2d Inf.
Sig Det, 2d Inf.

(b) 2d Bn (less 1 co): land at 6:00 AM in vicinity of hill 87. Seize hill 87, advance, seize and hold road extending east from 25. Send strong combat patrols out from left flank until relieved by 1st Inf. Exploit ground to front; seize hill 258 and beyond if found unoccupied or only lightly held. Clear SEASIDE of machine guns firing over approach to landing beach.

After the 3d Bn has passed through 2d Bn lines as indicated in following paragraph, advance and support its attack.

(c) 3d Bn: land at 7:00 AM in vicinity of hill 87, follow in rear of and pass through the lines of 2d Bn; jump off from east and west road through 25 and attack hill 258. Maintain connection with 2d Inf on left.

(d) Reserves land at 7:00 AM. Proceed to vicinity of 17; remain at my disposition.

(x) Battalion commanders desiring artillery fire laid down or lifted are authorized to send communications direct to OCC—One through Naval signal station on beach.

4. 2d Amb Co establishes dressing station on beach at 11:00 AM.

5. (a) Plan of Signal Communications: No change.

Communications with the naval signal station on beach will be maintained by each battalion.

(b) Axes of Communications:

1st Bn: Hotel DEL MONTE; B.M. 84; B.M. 169; B.M. 425.
2d Bn: 17; Hill 258; Hill 315; 162; B.M. 169.
3d Bn: Same as 1st Bn.
2d Inf: Same as 1st Bn.
Det "A": DEL MONTE—B.M. 84—B.M. 169—B.M. 425.

(c) Command Posts:

2d Inf. Closes on AP 91 at 6:00 AM, Nov 2; opens same date and hour on beach.

1st Brig. (Det A) Closes on AP 91 at 9:00 AM Nov 2; opens same date and hour on beach near letter "N" of DEL MONTE.

C,
Col.

Distribution:
Copies to:

Navy Chief Gunnery Officer, on OCC—One.
Senior Naval Officer on APs 14; 73; 84 and 91.
CG, 1st Brig.
1st Bn, 2d Inf.
2d Bn, 2d Inf.
3d Bn, 2d Inf.
MG Co, 2d Inf.
Hq Co, 2d Inf.
1st MG Bn.
1st Inf.
1st Bn 10th Mountain Artillery.
2d Amb Co.
Col M, Shore Commander.

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Map Problem No. 4

Maps: Same as in preceding problems.

General Situation:

Same as in preceding problems.

Special Situation:

Same as in the preceding problems with solutions.

Required:

The orders of Major D, commanding 1st Battalion, 1st Infantry.

* * * * * * *

An Approved Solution

Discussion

In compliance with orders from the regimental commander, Major D's command will be landed on the beach north of Hotel Del Monte in one body at 6:00 AM, with the initial mission of seizing the park about the hotel, and later supporting the right of the attack of the other battalions of the regiment.

Major D's command consists of his own battalion (less Company D) and the regimental machine gun company. His left will be directly supported by the 2d Battalion, which attacks in a direction parallel to that of Major D simultaneously with him. Major D's right is to be protected by the burning of the town of Del Monte, which it is hoped will drive out hostile machine gun nests in that vicinity. As the bombarding of Del Monte does not commence until 5:00 AM, it seems probable that by 6:00 AM, hour of landing, the conflagration will be such as to make it impracticable for the town of Del Monte to be entered.

The location of hostile troops is not known, but it would appear that machine guns are liable to be on the ridge between the railroad and the beach, and hostile forces may

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be expected to be met in the park about the hotel, and on the high ground south thereof.

Major D's initial mission, the capture of the Hotel Del Monte Park, should be carried out with the least possible delay in order to afford protection to the area in rear of this line in which successive waves of troops may land without being subjected to severe losses.

Assistance to the landing will be afforded by the navy as follows:

(a) Smoke screens between transports and beach, which with the wind blowing from the northwest (weather prediction, see Note 1, Problem 1), should blind hostile forces on the ridge between the railroad and the beach.
(b) Burning of Del Monte and of the Hotel Del Monte.
(c) Machine gun barrage on the right flank of Major D's advance.
(d) Artillery fire on points likely to be occupied by hostile forces.

Major D has no choice as to landing point, but he has some choice as to the formation in which he will land. The front of his advance between the east boundary of Del Monte and the lake 350 yards east of the Hotel Del Monte is about 700 yards. The three infantry companies may be formed with regard to depth:

(a) Three lines of one company each.
(b) Two lines, the first of one company, and the second of two companies.
(c) Two companies in the first line, and one company in the second line.

The machine gun company can be divided in corresponding manner.

Plan (a) has the disadvantage of giving an excessive front of one company. It might, however, have comparatively great driving power. If the Hotel Del Monte, as expected, is burning, it will be necessary to divide the attack by separating the command in two parts, one on each side of the Hotel Del Monte, or else limit the attack to one-half of the front. The latter alternative appears undesirable as it would enable hostile machine gun nests on the opposite side of the burning hotel to deliver an effective fire against new forces being landed.

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As it would appear undesirable to divide a single company to cover the ground on both sides of the Hotel Del Monte, Major D rejects plans (a) and (b) and decides on plan (c), sending one company of infantry with a platoon of machine guns on each side of the hotel, and retaining the third company with the balance of the machine gun company and the one-pounder section in support.

Major D dictates on the night of November 1-2, the following order to all officers of his command, and to the naval officer in charge of tows. He first orients the officers as to the situation, as given in preceding problems, and reads to them the regimental commander's order (see Problem 3). He then adds, pointing out on the Geological Survey Map, Monterey Quadrangle, the places mentioned by him:

"Company A, with one platoon machine gun company: land at 6:00 AM in the vicinity of the letter "D" in Del Monte. Seize at once west edge of ridge between railroad and beach; then proceed west of hotel Del Monte to road 7:25. Send strong combat patrol to cover the right flank; reconnoiter toward hills 181 and 257 to secure connection with Detachment B. Maintain contact with Company B on left.

"Company B, with one platoon machine gun company: land at 6:00 AM in vicinity of letter "M" in Del Monte. Seize at once ridge between railroad and beach. Then proceed east of Hotel Del Monte in connection with Company A, and seize east and west road through 25. Maintain contact with 2d Battalion on left. Reconnoiter without delay toward ridge just west of B.M. 84 and seize ridge if unoccupied.

"Company C: land at 6:00 AM in vicinity of letter "1" in Del Monte. Seize ridge between railroad and beach. Mop up ridge in rear of Companies A and B; then proceed to Monterey, and mop up machine gun nests firing over water front. This must be accomplished at earliest possible moment. Maintain contact with Company A.

"The machine gun company (less two platoons), Stokes mortar section and 1-pounder section: land at 6:00 AM; follow in rear of Company A, as reserve, at my disposition.

"Extra ammunition and casks of water will be taken ashore in each boat and dumped on beach. Collection of these stores will be by the shore commander.

"After attack by the 3d Battalion, starting from road east from road fork 25, against hill 258, this battalion will advance covering the right flank of the attack. I will issue orders for this later.

"I will be in rear of Company A."

Major D then invites questions, and answers such as are asked. The battalion adjutant writes out Major D's

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remarks, and later furnishes copies to each company commander, and to the regimental commander.

NOTE: Information concerning dressing station, axis of communication, etc., is contained in the regimental order, was read to the assembled officers and discussed as necessary.

Forms for Orders

FORM FOR EMBARKATION ORDER

Base Ports

(Place)
(Date)
(Organization)

FIELD ORDERS }
No — }

Maps: (Usually none.)

1. General statement as to the organization to be forwarded. (Destination may be omitted if secret.)
2. (a) Detailed statement of organizations to embark, giving time and place of departure, method of transportation from port of embarkation to ship, and name of ship on which organization is to embark. (For purposes of secrecy a ship may be referred to by a conventional number.)
3. (a) Statement as to when baggage is to be loaded; and location of freight cars or trucks.
   (b) Number of officers and men required to accompany baggage. (Usually so many per car.)
   (c) Directions as to advance details to be sent to each ship.
   (d) Information concerning rations which should accompany troops.
   (e) Instructions for disposition of sick before actual sailing.
   (f) Instructions as to mail.
4. Places to which messages for port of embarkation and other commanders should be directed.

(Signature)

(Distribution)

FORM FOR DEBARKATION ORDER

Base Ports

(Place)
(Date and hour)
(Organization)

FIELD ORDERS }
No — }

Maps: (Usually omitted.)

1. General statement as to where troops are to proceed to (rest camp; train; or direct to field).
2. Specific information as to each organization, or group of organizations. Time of debarkation, destination and route. (For secrecy, route may be omitted and reference made that route will be indicated by guides furnished.)

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3. (a) Instructions as to disposition of baggage, method of removing it from ship, and forwarding to camps or other points.
   (b) Instructions as to any necessary details required.
   (c) Instructions for disposition of sick.
   (d) Instructions as to rations.
   (e) Instructions as to mail.
4. Places to which messages are to be sent.

(Signature)

(Distribution)

Outline of Field Order for Forced Landing

(Title)
(Place)
(Date and hour)

Field Orders
No —

Maps:

1. Information of enemy and of our supporting troops (may be shown graphically on maps referred to).
2. Plan of commander; missions; objective; time of attack; zone of action. Assistance to be furnished by navy.

Troops:

(a) Detachment "A"
Commander
Troops

Beach Party
Beach Master
Beach troops

Shore Party
Shore commander
Shore troops

(b) Detachment "B"
Commander
Troops
Etc.

(c) Reserves:
Commander
Troops

3. (a) Detachment "A" to land at beach "A" at (hour). Mission; approximate time advance from immediate vicinity of beach will be made; objectives; special connection with other landings; zone of action (may be omitted where beaches are not continuous). Rate of landing.
   (b) Same as 3 (a) for landing on beach "B."
   Other similar subparagraphs as necessary.
   (c) *Reserves*: Mission, positions; when and where landed.
   (d) *Machine guns*: Support to be furnished by naval ships. Time and general description of support. (Reference to navy order.)
   (e) *Artillery*: Nature of preparation, if any; support to follow preparation; barrages for protective fires. (Artillery support at first generally furnished by the navy. Ordinarily only a part of the divisional artillery can be landed the first day.) (Reference to navy order.)
   (f) *Air Service*: Contact work; assignment to artillery duties; reconnaissance and combat missions. (This work mainly by hydroplanes, possibly under control of the navy.) (Reference to navy order.)
   (g) *Engineers*: Special work in clearing beaches. Demolition of obstacles; improvement and construction of paths, trails, roads and bridges, incident to combat operations.
   (h) Instructions for any other troops not covered by previous paragraphs.
   (x) *General Instructions*:
      (a) General conduct of each landing; connections with each other, and directions as to co-operation.

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(b) Instructions as to constructing defensive positions to cover beachheads seized.
(c) General instructions as to hostile counter-attacks.

4. (a) Stations for slightly wounded (usually one at or near each beach).
(b) (Reference to Administrative Order.)

5. (a) Plan of signal communications. (See Annex No—.)
(b) Axes of signal communications.
(c) Command posts.
(x) (1) Navy signal communications.
(2) Navy command posts. (Designate ships controlling artillery fire, machine gun fire, etc.)

Distribution:
(How and to whom issued.)

(Signature)

NOTE:—Paragraphs relating to co-operation with the navy should be written after an understanding has been arrived at between the army and navy commanders.

OUTLINE FOR ADMINISTRATIVE ORDER

Forced Landings

(Title)
(Place)
(Date and hour)

ADMINISTRATIVE ORDERS
No —

Maps: To accompany FO No—.

I. BEACH AND SHORE PARTIES.
General instructions covering authority of beach master and shore commander.

II. SUPPLY.

A. *Rations*:
1. Special instructions, if any.
2. Distributing points (usually one at each beach); time they will commence to function.

B. *Ammunition*:
1. Refilling points (usually one at each beach); kind of ammunition, and hour when it will be available.

C. *Engineer Material*:
1. Location of dumps, if any, time they will commence to function, kind of material to be on hand.

D. *Water*:
1. Method of supply.
2. Special instructions, if any.

NOTE:—Similar subparagraphs for other services as necessary.

III. EVACUATION.

A. *Men*:
1. Collection:
a. Location station for slightly wounded. (If a brigade or less at a beach unnecessary, as dressing station can take over this function until division is deployed.)

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b. Location ambulance company dressing station and bearer platoons. (Attach ambulance boats to cover this.) Usually one ambulance company covers each brigade by a dressing station and bearer platoon.
c. Location of reserve ambulance companies.
d. Second phase—send ambulance transportation ashore; priority to horsed company.

2. Hospitalization:
First phase:
a. Designation of hospital ships to receive slight cases, contagious and serious cases.
Second phase:
a. When military situation requires it, establish hospital companies ashore; priority to horsed company.
b. Location of reserve hospital companies.

3. Special arrangements as to:
a. Medical supply.
b. Routes and destinations.
c. Classification of casualties.
d. Evacuation.

B. *Animals*:
1. Machine gun units located ordinarily at or near beaches.
2. Evacuation (usually postponed until later, when practicability can be decided upon).

IV. ROADS.
A. If roads exist near landing, state assignment of roads.
B. Directions as to construction of wharves, paths, trails, and roads, not incident to the combat operations, and order in which these are to be constructed. Details of troops required for this purpose.
C. *Circulation* instructions, if any. (Referenece to Circulation Map.) Kind of transportation to be used.
D. *Traffic Control*:
1. Police arrangements.
2. Priority of traffic.

V. SALVAGE AND BURIAL.
A. *Salvage*:
1. Location of dump (usually at each beach).
B. *Burial*:
Name and location of officer in charge.
Details, usually announced later.

VI. MILITARY POLICE.
A. At beaches and vicinity, as directed by shore commander.
B. Plan for pushing military police control forward as advance progresses.

VII. PRISONERS OF WAR.
A. Collecting points (usually at each beach).
B. Disposition of prisoners (designated ships to which they are to be sent).

(Authentication)

(Distribution)

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(E) NOTE ON GAS AMMUNITION FOR NAVY GUNS

Estimated ammunition required for gassing large areas and for smoke screens, using 14-inch naval guns and assuming the net contents to be 120 pounds of phosgene or mustard gas or 155 pounds of smoke (white phosphorus).

MAJOR W. N. SCHULZ,
Corps of Engineers

GAS	Per area 100 yds. sq.	Per area 1,000 yds. sq.
Mustard Gas (persistent). The minimum amounts will harass and neutralize, but can not be counted on for many casualties. The maximum amounts should cause many casualties and will practically insure the evacuation of the area within twenty-four hours and probably much sooner, depending on the progress of the battle elsewhere and the determination of the defenders.	From 1 to 4 rounds repeated if possible every 6 hours.	From 100 to 400 rounds repeated if possible every 6 hours.
Phosgene (non-persistent). Maximum amount should be used to secure large casualties; to be delivered on entire area, or on large parts of it in short bursts about 2 minutes' duration. For neutralization only, the fire need not be in bursts, and the smaller amounts should be used, but repeated oftener, depending on terrain.	1 to 2 rounds repeated at intervals of 3 or more hours. Oftener for neutralization.	100 to 200 rounds repeated at intervals of 3 or more hours. Oftener for neutralization.

If short of guns or ammunition, fairly satisfactory results can be obtained by limiting the fire to well chosen portions of the areas. Usually, critical areas or belts can be chosen where the fire will do the most immediate or local good, and practically neutralize the whole area. Gas ammunition can frequently be cut to 25 per cent or less by this means, although the 100 per cent area is preferable if possible.

SMOKE

For a screen 1,000 yards long, lasting one-half hour, it is estimated that 50 to 250 rounds of 14-inch shell would be required. The lower estimate would be more usual and under the most favorable conditions even less might suffice, but do not figure on less in the absence of actual experimental work.

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LIST OF SHIP SYMBOLS

The following symbols are used in orders and correspondence covering oversea expeditions:

CLASSES OF VESSELS

CLASS OF SHIP	SYMBOL	CHARACTERISTICS		
		Main Battery	Displacement Tons (full load)	Speed Knots
BATTLESHIP:				
First Line	BB	12" plus	20,000 plus	20 plus
Second Line	OBB	12"	20,000 minus	15-20
MONITORS:				
First Line	BM	14" plus	6,000 plus	--------
Second Line	OBM	12"	6,000 minus	--------
BATTLE CRUISERS:				
First Line	CC	13.5" plus	16,000 plus	27 plus
Second Line	OCC	12"	16,000 plus	27 minus
CRUISERS:				
First Line	CA	8" plus	8,000-16,000	27 plus
Second Line	OCA	8" plus	8,000-16,000	27 minus
LIGHT CRUISERS:				
First Line	CL	7" minus	4,000-8,000	27 plus
Second Line	OCL	7" minus	4,000-8,000	27 minus
AUXILIARY CRUISERS:				
Liner Type	CP	5"-6"	8,000 plus	15 plus
AIRCRAFT CARRIERS:				
First Line	CV	Equipped with flying off deck		27 plus
Second Line	OCV	Equipped with flying off deck		27 minus
MINE LAYERS:				
First Line	CM	7" minus	3,000 plus	27 plus
Second Line	OCM	7" minus	3,000 plus	27 minus
DESTROYERS:				
Leader	DL	5"-6"	1,500 plus	30 plus
First Line	DD	4" plus	800-1,500	27 plus
Second Line	ODD	4" minus	500-800	25 plus
Light Minelayer	DM	5" minus	3,000 minus	27 plus
SUBMARINES:				
First Line	SS	3"-4"	500-1,000	13 plus
Second Line	OSS	3" minus	300-500	10 plus
Fleet, First Line	SF	3"-5"	1,000 plus	20 plus
Fleet, Second Line	OSF	3"	1,000 plus	20 minus
Cruiser	SC	6" plus	2,000 plus	16 plus
Minelaying	SM	Equipped to lay anchored mines		
Monitor type	SB	12" plus	1,500 plus	15 plus
PATROL VESSELS:				
(Anti-Sub Craft)				
Eagle type	PE	3"-4"	100-500	14 plus
Sub-Chaser	PC	3"	100 minus	14 minus
Gunboat	PG	3"-6"	500-4,000	--------
Yacht	PY			
AUXILIARIES:				
Destroyer Tender	AD			
Submarine Tender	AS			
Heavier-Than-Air Craft Tender	AV			
Lighter-Than-Air Craft Tender	AZ			
Repair Ship	AR			
Storeship	AF			
Collier	AC			
Oiler	AO			
Ammunition Ship	AE			
Cargo Ship	AK			
Transport	AP			
Hospital Ship	AH			
Fleet Tug	AT			
Mine Sweepers	AM			
Miscellaneous	AG			

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NAVY AIRCRAFT

		SPEED AND ENDURANCE				ARMAMENT	
		MAX.		CRUISING		Guns	Bombs
LIGHTER-THAN-AIR CRAFT:		Miles	Hours	Miles	Hours		
Rigid Dirigible	ZR	65	120	30	300	MGs and light guns	
Non-Rigid Dirigible	ZN	50	12	30	30	2 MGs	
Kite Balloon	ZK						
HEAVIER-THAN-AIR CRAFT:							
Fighting Plane	VF	140	2	80	3½	2 MGs	5- 20-lb
Observation Plane	VO	100	2	60	4	2 MGs	5- 20-lb
Scouting Plane	VS	100	6	75	9	4 MGs	2-250-lb
Patrol Plane	VP	80	5	50	10	4 MGs	4-250-lb
Torpedo and Bombing Plane	VT	90	3	75	5	2 MGs	1-1650-lb (T), or bombs
Fleet Plane (NC)	VG	85	10	70	20	6 MGs 1-3 pdr.	4-250-lb

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